

CANCER

Edited by D. W. Penner, M.D.

Bronchogenic Carcinoma

D. S. McEwen, B.A., B.Sc., M.D.

The number of diagnosed cases of bronchogenic carcinoma is increasing at such an alarming rate that a review of the situation at present seems worthwhile.

Conservatively speaking, ten per cent of all autopsies are done on patients with cancer and ten per cent of these have bronchogenic carcinoma. On the average, then, between one and two per cent of all autopsies are done on patients with bronchogenic carcinoma, although some centres run as high as five or six per cent. In round figures, eighty per cent of bronchogenic carcinomas occur in males, eighty per cent are in the larger bronchi, eighty per cent occur between the ages of 45 and 65, eighty per cent metastasize to the regional lymph nodes, eighty per cent can be diagnosed bronchoscopically at some stage of the disease, and eighty per cent have minimal or no x-ray changes in the curable stage.

In reviewing one thousand consecutive bronchoscopies done in recent years at St. Boniface Hospital, it was found that ninety-two patients had bronchogenic carcinoma. Allowing for those cases that were missed, it is seen that a worthwhile percentage of cases going to general bronchoscopic clinics, either have bronchogenic carcinoma or some condition in which bronchogenic carcinoma has to be excluded. In this series seventy-eight per cent were men; the average age was 51 years, and the main lesion was found to originate in the right lower lobe in twenty-five cases, the right upper in sixteen, the left lower in twelve, the left upper lobe in twelve, the right main bronchus in eleven, the left main bronchus in eight, the right middle lobe bronchus in six, and the trachea in two cases. These figures coincide fairly well with the usual autopsy statistics except that right upper lobe and left upper lobe carcinoma are found more frequently in autopsy figures suggesting that tumors in this location are more frequently missed bronchoscopically than those in the lower lobes.

Etiology

There seems little doubt that our aging population is the greatest factor in the increase of bronchogenic carcinoma. Fifty years ago only seventeen per cent of the population was over forty-five years of age; now close to twenty-nine

per cent of the population is over forty-five. This, together with the fact that many cases formerly passing as lung abscess, gangrene of the lung, unresolved pneumonia, empyema, etc., were diagnosed erroneously and bronchogenic carcinoma missed, would suggest that there is also a real increase in the incidence of this tumor. In the past fifteen years, general carcinomas have increased twenty per cent, whereas bronchogenic carcinomas have shown a three hundred and seventy per cent increase. In the past thirty years general carcinoma has shown an increase of sixty-five per cent, whereas there is an increase of almost one thousand per cent in bronchogenic carcinoma. Many irritants have been blamed for this increase but the only one generally accepted is the irritation from radio-active material producing the Schneeberg type of tumor found in miners in the Erz mountains in Saxony. Of the other irritants mentioned as possibilities, tobacco, dust containing fumes, and tar products have been frequently mentioned. Clinically, it is striking to notice the large percentage of very heavy smokers in most series of cases. Other suggestive evidence of chronic irritation playing some part is obtained from a series reported by Fried, where eleven per cent of his bronchogenic carcinomas were associated with tuberculosis. In my own series three cases had tuberculosis and bronchogenic carcinoma. In two of these cases the carcinoma was in the same portion of the lung as the tuberculosis, and in the third the carcinoma was in a different lobe. Chevalier Jackson has reported several cases of bronchogenic carcinoma years after removal of a foreign body that had been present for some time. He also reports one case where bronchogenic carcinoma developed around a piece of shrapnel that was present in the lung some twenty years. Time alone will prove what part, if any, these irritants play in the production of carcinoma.

The point I wish to stress more than any other in this presentation is the importance of early diagnosis. Bronchogenic carcinoma can only be diagnosed if it is suspected. In view of the fact that this condition is now the third or fourth commonest chronic lung disease it should always be considered as a diagnostic possibility especially in males over the age of forty. The history and physical examination are probably the most important single factors in arousing our suspicions. A cough that is unexplained, is dry and hacking in type, and lasting over one month should always

make us wary, particularly if associated with very scanty sputum which later becomes mucoid and possibly blood-tinged. The pain if present is usually deep-seated, steady and progressive, but dyspnoea may be of rather sudden onset and paroxysmal. If this dyspnoea occurs in older persons without cardio-vascular disease, and seems out of proportion to the other symptoms and physical or radiological findings, especially if associated with a wheeze, bronchogenic carcinoma becomes a strong diagnostic possibility. In this condition the wheeze can frequently be heard better from the open mouth than by means of the stethoscope. Physical examination may detect some other evidence of partial bronchial obstruction, such as cyanosis, localized emphysema or atelectasis. X-ray at this stage may be negative, but if plates are taken on both inspiration and expiration, areas of obstructive emphysema will often show up before gross atelectasis occurs. Lipiodol studies will also occasionally show an early tumor before complete blocking of the bronchus occurs. However, earliest proof is usually obtained by means of the bronchoscope, either by viewing the tumor, obtaining a biopsy for pathological study, obtaining secretions for study of cells, or by determining the presence of enlarged regional glands.

Even late diagnosis is difficult in many cases. In one recently reported series of 300 consecutive cases the diagnosis, although suspected clinically and radiographically, was proven bronchoscopically in 72% of the cases. Diagnosis was proven by biopsy of metastases in 4%, by operation in 3%, by the finding of malignant cells in the sputum in 1%, and the remaining 20% were only proven at autopsy.

Pulmonary symptoms predominate in only slightly more than half of the cases. These symptoms and signs include cough, sputum, chest pain, haemoptysis or blood-streaked sputum, localized emphysema, localized atelectasis, lung abscess, unresolved pneumonia, localized bronchiectasis, pleural effusion and some disturbance of the diaphragm with involvement of the phrenic nerve. The right diaphragm is affected more frequently than the left, is usually elevated showing paradoxical movement and occasionally causing intractable hiccough. The effusion, if present, is usually blood-stained, but many cases remain serous or purulent throughout.

Almost half the cases have non-pulmonary signs and symptoms predominating. These include pyrexia, weakness, sweats, clubbing of the fingers, loss of weight, spontaneous fracture, bone pain, unexplained anaemia, signs and symptoms of an intra-cranial lesion, evidence of cardio-vascular involvement, dysphagia, hoarseness, enlarged lymph nodes in the neck or axilla, Horner's Syndrome, and

evidence of venous obstruction, particularly in the inferior vena cava and hepatic vessels with resulting enlargement of the liver, ascitis and jaundice. This type of case merely emphasizes the fact that small symptomless primaries of the bronchus may produce large secondaries in many other organs. In cases where secondary tumors are found with no obvious primaries, bronchogenic carcinoma should always be kept in mind. In 436 consecutive cases of non-tuberculous unexplained haemoptysis, bronchiectasis was the commonest proven cause in 138 cases, and bronchogenic carcinoma second in 83 cases. About one-third of all cases have effusion at the time of death, and roughly one-third cavitate before death. The cases that cavitate are more prone to terminal haemoptysis. It is interesting to note that secondaries in the lung never cavitate. Although some centres still use aspiration biopsy in an attempt to prove or disprove bronchogenic carcinoma, it seems unwise first, because aneurysm frequently enters into the differential diagnosis; second, because of the possibility of a very vascular tumor being present, and third, because of the possibility of an implanted tumor being produced. Pathologically, the larger bronchi are involved in close to 80% of the cases and the peripheral type of tumor found in approximately 20%. Squamous cell carcinoma is more common in men, is slower growing, and later to metastasize. It usually occurs in the larger bronchi and may invade the lumen or surround the lumen, invading the contiguous lung tissue. Adenocarcinoma occurs more frequently in women, is more malignant than the squamous cell tumor and is sometimes difficult to differentiate from a benign adenoma. The undifferentiated type of tumor is the most malignant. It was formerly thought to be an oat-cell sarcoma. Various combinations of the above types of tumor have been found. At this stage it should be pointed out that even a benign tumor is not innocent, if it occludes a vital passage or causes pressure in a vital area it may still kill the patient. One other type of bronchogenic carcinoma worth mentioning is the superior sulcus or Pancoast's tumor. This type is noted for its regional invasiveness. In the early stages there may be only thickening of the pleural cap over one lung but soon severe pain becomes manifest with evidence of involvement of the upper ribs, the last cervical and first thoracic vertebrae, regional lymph nodes, and evidence of involvement of the brachial plexus and early onset of Horner's Syndrome. This type is one of the most painful conditions in the field of medicine.

The position of the bronchoscope in pulmonary disease is often questioned. However, it seems just as logical for an internist to know the appearance of the inside of the tracheobronchial tree in

pulmonary disease as it does for the gynaecologist to know the appearance through a vaginal speculum. The bronchoscope is merely a speculum for examination of the lung. As in other regions of the body the speculum inserted into the lung may find the structures within sight to be normal, or some disease may be found which is amenable to treatment through the speculum, or amenable to medical or surgical treatment later. Also, disease may be found requiring irradiation. By repeated bronchoscopy using all methods now available the bronchoscopist can diagnose bronchogenic carcinoma in almost 80% of the cases some time during the course of the disease. Even in the remaining cases important information is still obtained regarding the condition of the bronchi, the size of the mediastinal nodes, the mobility and motility of each segment of the lung. Also, lipiodol can be introduced and secretions can be collected from various regions. An interesting advance in the diagnosis of this condition has been by the examination of secretions. Examination of ordinary sputum has proven disappointing, but secretion aspirated through a bronchoscope from a suspicious area in the lung and examined either by the wet film method or by the artificial paraffin block method, occasionally show the presence of carcinoma when other methods fail. The bronchoscopic picture is usually of a nodular, friable, easily bleeding area with some broadening of the regional carinae and a woody type of rigidity. As a rule, there is some puckering of the mucosa above the mass or the constricted area involved. To recapitulate the aid that may be given by X-ray, I would like to point out that very early the lesion may produce no X-ray changes. Later, a minimal shadow may appear with localized areas of emphysema or atelectasis, found earlier if both inspiration and expiration X-ray plates are taken. Lipiodol studies are frequently valuable. X-ray shows the earliest evidence of displacement, of the formation of abscess,

and frequently of the presence of metastases. Occasionally diagnostic X-ray therapy is of value to rule out one of the lymphomas. Probably 60% of cases can be diagnosed radiographically.

Metastases may occur in any one of five ways: (1) direct spread; (2) via the blood stream; (3) via the lymphatics; (4) endobronchial spread; (5) by implant. By averaging the figures obtained from several series of autopsies on cases of bronchogenic carcinoma, metastases were reported as follows:

1. Local lymph nodes 83%.
2. Abdominal lymph nodes 38%.
3. Pleura 37%.
4. Liver 35%.
5. Cervical and axillary lymph nodes 33%.
6. Adrenals 32%.
7. Lung 31%.
8. Kidney 25%.
9. Skeletal 24%.
10. Nervous tissue 23%.
11. Brain 16%.
12. Heart and pericardium 13%.

Although an occasional metastases was reported in many other regions of the body, especially the skin, it was interesting to note that approximately ten per cent of all cases had no distant metastases even at the time of death.

Prognosis

The life expectancy after diagnosis varies from weeks to five years with an average of nine months. Of the patients diagnosed about 50% die within a year, 30% in the second year, 15% during the third and fourth year after diagnosis, and about 5% survive longer than four years.

Treatment will not be included in this discussion except to say that if the general practitioner, the chest specialist, the radiologist, and the bronchoscopist will combine their diagnostic abilities and discover bronchogenic carcinoma in its early stages the chest surgeon will cure a much higher percentage of cases than is possible at the present time.



CARDIOLOGY

Edited by J. M. McEachern, M.D.

Use and Limitations of the Electrocardiogram

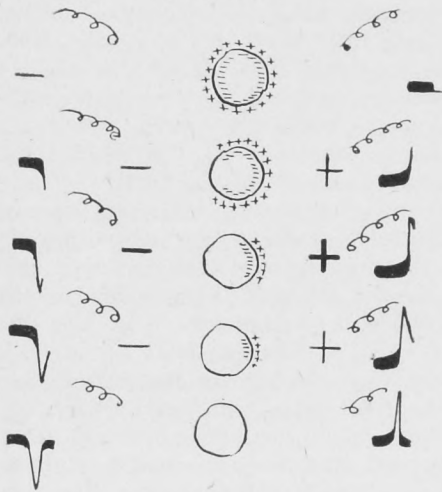
Ben H. Lyons, M.D.

The position which electrocardiography occupies in clinical diagnosis of heart disease can be best evaluated if we have an understanding of the principles involved in the formation of the

tracing. An attempt will therefore first be made to outline in a simplified manner some basic concepts in electrocardiography.

The membranes of all cells are dielectric—that is they have the property of maintaining opposite electrical charges on each surface—positive on the outer and negative on the inner. If one electrode of a galvanometer is placed in proximity to the cell, with the other at a distance, no deflection results. If now the cell membrane is stimulated it loses its electrical properties at the point of stimulation. Result—a difference of potential between the side of the cell stimulated (which is now electrically dead), and the opposite, still charged surface. An electrode on the stimulated side now faces negative charges within the cell, while on the opposite side it faces positive charges. The exploring electrode will record a deflection which will be upright if on the positive side, and downward on the negative. The process of discharge or depolarization continues around the cell, the deflection of the galvanometer reaching a peak and coming back to the base line when the entire cell is depolarized (has lost all its electrical charge).

Diagram 1



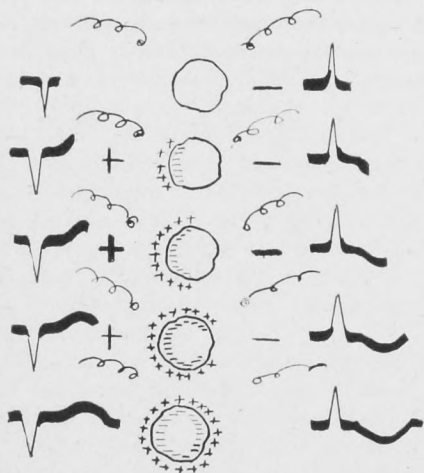
DEPOLARIZATION

Diagram 1

The cell in the depolarized state is unstable and changes rapidly occur which result in the membrane regaining its electrical properties and the reformation of the charges. Another deflection of the galvanometer is the result during this process of recharging (or repolarization). Again the deflection will be upright on the positive side and downward on the negative.

Diagram 2

Diagram 2



REPOLARIZATION

The heart muscle, of course, consists of many charged (or polarized) cells. The stimulation comes from the inner or endocardial surface, and the total effect is the same as if each cavity were a single cell, with negative charges on the endocardial, and positive on the epicardial surfaces. The stimulus, as is well known, is applied by a special pathway. It originates in the sinoauricular node, and travels through the auricular muscle. As the cells in the auricles are discharged, the P wave is inscribed by the galvanometer. At the A-V node a delay occurs and then the impulse passes down the bundle of His, bundle branches, Purkinje fibres, and then through the ventricular muscle, depolarizing its cells, and causing the inscription of the QRS complex. For a brief period the heart is completely depolarized, represented by the ST segment. Repolarization (or recharging) in the heart, occurs from without in, and so an electrode at the epicardial surface will register a positive deflection, the T wave.

Diagram 3

In order to get maximum information about the flow of these electrical currents, electrodes are placed in various positions. The limb leads, 1, 2 and 3, consists of connections between the arms and the left leg. Chest exploring electrodes are placed at definite points on the chest wall, 1 and 2 being on each side of the sternum, 4 in the mid-clavicular line, etc. Commonly used are 2, 4 and 5. 3 may also be used routinely, and should be used in acute coronary cases. We thus get a tracing consisting of 6 or 7 leads. We study the appearance of each lead, and the pattern formed by the combination of leads. By reasoning from the variation from normal seen, and by the experience which has been gained, we attempt to detect the presence of abnormalities and evaluate their significance.

Diagram 4

The first problem, and often the most difficult, is to decide when a given change is within or without the normal range. Much study is still going on to gather statistics to better define the limits of normal variations. Many factors have to be considered, such as **age** and bodily **habitus**.

Age: The cardiograph in infancy is distinctive. In adolescence changes may normally be present which are abnormal in the adult. In later life, deviations are almost constantly found which are accepted as normal at that age, but which would be considered as pathological in a young adult.

Habitus: Habitus influences the direction or axis of the currents. Normally the current is from the right arm toward the left arm and left leg—(a little more toward the latter). In a stocky person with a transverse heart, the current will flow towards the left arm, constituting a left axis shift. In a ptotic individual with a drop heart, it will flow towards the leg, constituting a right axis shift. These normal variations have to be taken into account so that they will not be confused with abnormal axis deviation (change in direction of the current) due either to ventricular hypertrophy (right or left), or to coronary disease.

Diagram 5

Variations from the normal may also be due to physiological or functional conditions not indicating organic disease, such as changes resulting from exercise, emotion, cold, tobacco, drugs, etc.

In analysing a disturbance in the formation of the tracing, 4 types of change are recognized.

- (1) Disturbances in origin of impulse.
- (2) Disturbances in depolarization or discharge.
- (3) Disturbances of order of repolarization or recharging (T wave).
- (4) Pathological currents "of injury" (ST segment).

Diagram 3

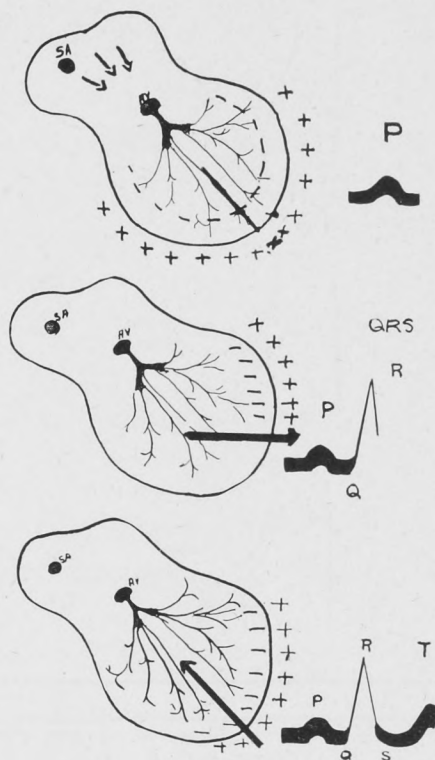


Diagram 4

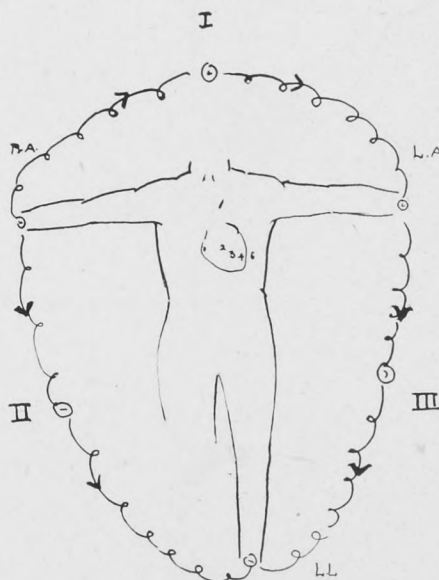
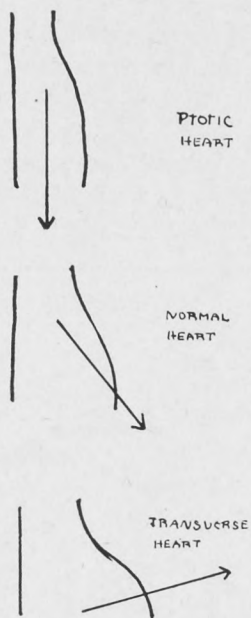


Figure 5



1. Disturbances in Origin of Impulse.

Impulses may start in the auricles, A-V node or ventricles, creating various arrhythmias such as extra systoles, tachycardias, fibrillation, flutter etc.

Diagram 6

These abnormal rhythms may be caused by functional disorders, digitalis and other drugs, rheumatic or arteriosclerotic heart disease.

2. Disturbance in Depolarization or Discharge.

The spread of the impulse may be delayed or cut off at various levels causing sinuauricular, auricular, A-V bundle branch, or terminal (arborescent) blocks.

Diagram 7

If the electrode faces an area of dead muscle, the infarct acts as an "electrical window." The electrode is no longer facing a positive outer charge but the negative one inside that ventricular cavity so that an initial downward deflection or Q wave is inscribed of a pathological nature.

Diagram 8

As has been previously mentioned, ventricular hypertrophy and also muscle loss due to coronary disease, will result in shifts in the direction of axis of the depolarizing wave. Small deflections or low voltage, will be produced if the bulk of muscle is diminished as in senility or coronary disease; also if the heart is insulated from the electrodes by pericardial or myxedematous fluid, by emphysema, by edema or obesity.

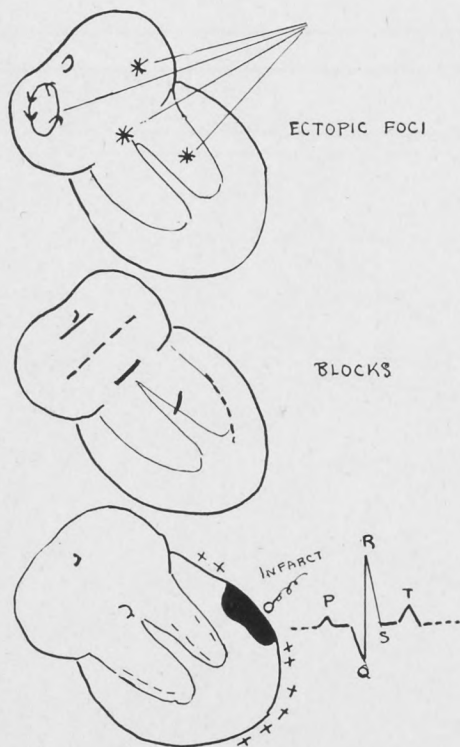
3. Disturbance in Repolarization or Recharging.

Normally the order of repolarization takes place from without in, producing an upright T wave. If this order is disturbed, the T wave will change in contour or direction. Many conditions are capable of causing this change, e.g. anoxaemia as in coronary disease; hypertrophy; inflammatory changes such as pericarditis and myocarditis; toxæmias and infections; drugs such as digitalis; metabolic, electrolyte, and Ph variations as in acidosis, uremia, thyroid disease; physiological and nervous influences, etc.

4. Pathological Currents—"Currents of Injury".

Injury to muscle which is not sufficient to cause the death of the tissue, results in the formation of a barrier on the surface between it and the uninjured tissue. This barrier, on the damaged side of which are formed negative charges, and on the well side, positive ones. This results in a continuous pathological current being produced. We will recognize the presence of this current by its absence, during the brief time that the ventricle is completely depolarized. This period is represented by the ST segment in the tracing. The current of injury is neutralized by a constant current from the machine. When, during the ST period, the injury current is "shut off," the

Figures 6, 7, 8



tinuing machine current causes a deflection of this segment. The result is an ST elevation if the injury is on the side of the electrode, and depression if on the opposite side.

Diagram 9

Currents of injury are typically caused by acute coronary infarction, myocarditis, and pericarditis. In heart strain and digitalis effects similar changes are recorded, whether by the same mechanism is uncertain.

As an example of the genesis of an abnormal electrocardiogram, the effect of an anterior apical infarction on chest lead 4 can be followed. In a lesion at this site, this electrode will be directly over the infarct. There are three zones in the infarcted area—a zone of dead muscle, adjacent to it a layer of injury, and then an anoxic area.

Diagram 10

Because the electrode faces not positive charges, but dead muscle (which has no charge), it takes the initial deflection through this "electrical window," from the negative charges inside of the ventricular cavity, producing the downward initial Q wave. The current of injury from the layer of injured but living muscle produces a deflection of the ST segment. The area of anoxemia causes T wave inversion. After a few days the injury current subsides, but the negative T wave in the anoxic area deepens because the injured area is added to the anoxic zone. In the course of weeks, months—or never—the anoxia improves and the T wave becomes upright. As healing takes place, the Q wave may disappear, but usually remains to mark the scar of the infarct for the remainder of life.

In interpreting a tracing we may describe it as:

- (a) "Normal tracing."
- (b) Because there is a wide borderline between normal and abnormal, we may have to say "probably normal," or "probably abnormal."
- (c) "Definitely abnormal"—"evidence of myocardial damage," etc.
- (d) If the pattern suggests a particular entity, we will say "consistent with this or that diagnosis."
- (e) We may name a diagnosis without qualification. It is unusual for us to do this from the electrocardiographic tracing alone because changes which are seen can usually be attributed to more than one possible aetiological factor; for example, auricular fibrillation or T wave inversion can be produced by a number of agents. This limitation applies to most other methods of laboratory examination as well.

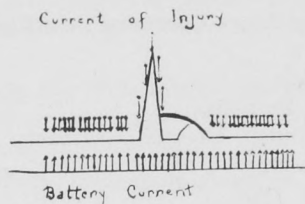
As an example of the problems that may arise let us consider the differential diagnosis of recent infarction.

a. Coronary Disease

Recent Coronary Occlusion.

Acute Coronary Insufficiency, due to severe

Figure 9



Battery Current

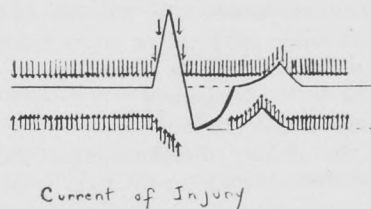
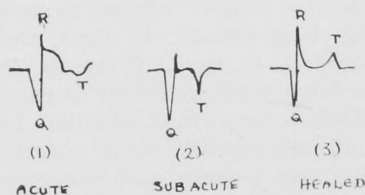
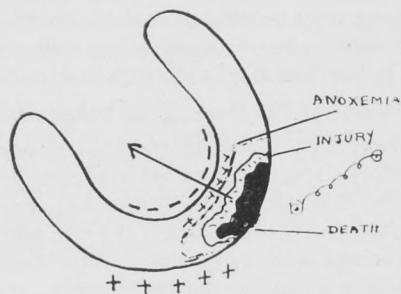


Figure 10



angina. The electrocardiographic changes will be transient.

Chronic Coronary Insufficiency, serial cardiographs will show no change.

b. Extracardiac Acute Coronary Insufficiency

Shock.

Hemorrhage.

Pulmonary Embolism.

Diabetic coma, Uremia, Narcosis, Cerebral Haemorrhage.

A coronary type of contour will usually be present only if previous anoxia due to coronary sclerosis is present.

c. Inflammatory Lesions

Acute Pericarditis.

Focal Myocarditis or Necrosis.

d. Ventricular Strain

Digitalis Effects

Bundle Branch Block

} May create difficulty in diagnosis.

Each of these conditions has its own typical pattern, but when atypical or superimposed on a coronary pattern it may be confusing.

Diagram 11

From the above it is obvious:

Firstly, that proper interpretation of the electrocardiogram necessitates correlation with clinical findings.

Secondly, in doubtful cases of an acute nature, repeat cardiographs will usually produce a definitive diagnosis. They will differentiate between acute and therefore changing states, and chronic or static conditions. The time and nature of evolution will nearly always differentiate an infarct from simulating diseases. Furthermore, by repeat tracings we may be able to make a diagnosis from changes which have taken place when no one tracing in itself is diagnostic of a lesion.

Value of Cardiograph in Diagnosis

Coronary Occlusion—Interpreted in correlation with history, and with serial tracings having at least three chest leads, the diagnosis can be correctly made in 95% of cases. On the other hand, single tracings with only one or two chest, interpreted without knowledge of history, involve a considerable percentage of error.

Angina Pectoris—In two-thirds, abnormalities will be found. In one-third of cases, the cardiograph will be normal. There are several explanations. The coronary arteries may not be narrowed enough, or for long enough, to have produced extensive myocardial changes. There may be extensive disease but located in "silent" areas where it does not influence the wave of potential. Lesions which are equal and opposite, as on anterior and posterior walls, may balance each others effects on the tracing. A normal cardiograph, therefore, does not rule out angina. Furthermore, even if we find evidence of myocardial damage, that does not

prove that the pain complained of by the patient is due to his heart. It may still be caused by some other lesion such as hiatus, hernia, gallstones, fibrositis, or neuroses. Therefore, while in suspected angina a tracing may be helpful to disclose myocardial disease, fundamentally it is a clinical

Figure 11

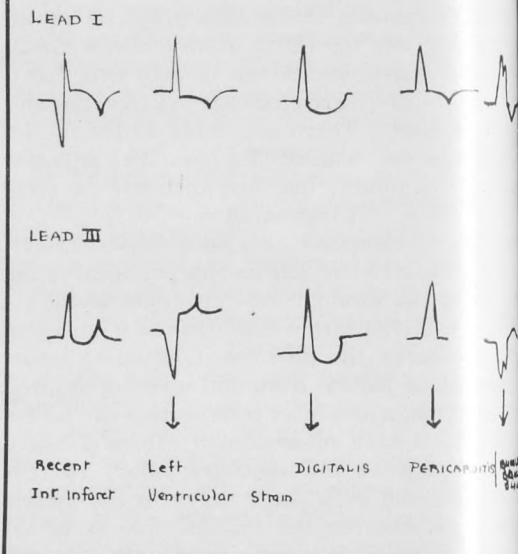


Figure 12

DIAGNOSTIC VALUE of EK. G.

ARRHYTHMIAS	_____ 95%
ACUTE INFARCTION	_____
STRAIN (valvular, hypertensive)	_____
DIGITALIS	_____
CONGENITAL HEART D	_____
CORONARY HEART D	_____
HYPERTROPHY (valvular, hypertensive)	_____
COR PULMONALE	_____
RHEUMATIC FEVER	_____
PERICARDITIS	_____
ANGINA PECTORIS	_____
PULMONARY EMBOLUS	_____
MYXEDEMA	_____
HYPERTHYROIDISM	_____
AVITAMINOSIS	_____
HYPOCALCEMIA	_____
INFECTIONS, ETC.	_____

diagnosis which can only be made by a careful history and clinical evaluation. In the future we may get more help from the cardiograph by means of anoxaemia tests, which are giving promise of making positive diagnosis in some cases. These tests consist in noting the effects on the tracing following exercise or inhalation of a diminished concentration of oxygen.

Arteriosclerotic Heart Disease (apart from angina and recent infarction)—Most cases will give positive cardiographic changes, but as with angina, there may be extensive disease with a normal cardiograph. Heart failure can be present and the tracing be normal. A patient may leave the office with a normal tracing in his hand and drop dead on the street. It is important, therefore, to remember that a negative tracing does not rule out serious heart disease. On the other hand, in defence of the cardiograph it should be stated that it often may disclose the presence of heart disease not revealed by any other means.

Arrhythmias—The cardiogram is the court of last appeal. Results are almost 100% accurate in disclosing the mechanism of an irregular pulse. There is probably no laboratory examination in medicine which is more accurate.

Digitalis—In the detection of digitalis effects the cardiograph is extremely useful. Therapeutic as well as toxic effects are clearly seen on the tracing and will often be helpful in evaluating effects of digitalis.

Congenital Heart Disease—In some types the tracing is specific, and the cardiograph is used routinely in diagnosis.

Hypertrophy—(Due to valvular disease or hypertension)—will often be evident on the cardiograph before it is on the X-ray, and will also tell us which chamber is enlarged. Of greater value even than this is the detection of **Ventricular Strain** in hypertrophied hearts, indicating that the heart is outstripping its blood supply, before as

a rule, there is any clinical evidence that the myocardial reserve is impaired.

Pulmonary Embolism (acute cor pulmonale)—Diagnostic changes are present in only 10-20% of cases. In about 50% there may be some abnormalities.

Chronic Cor Pulmonale—Tracings may tell us the effect on the right heart of mitral stenosis, emphysema, silicosis, etc.

Infections, Toxaemias, Acidosis, etc.—May produce myocardial changes affecting the cardiograph.

Acute Rheumatic Fever—Cardiograms taken during an attack may reveal by a prolonged PR interval, the first evidence of cardiac involvement. This change may also be useful in differential diagnosis between rheumatic fever and other arthritides.

Pericarditis—Often of value in diagnosis.

Thyroid Disease—Occasionally helpful.

Diagram 12

In Conclusion: I have listed an imposing array of conditions in which the cardiogram is helpful. I want to emphasize again what I feel is the most important thing you should remember about electrocardiography. It is that you cannot use the cardiograph as a short cut to a clinical diagnosis. Only in rare cases will it give you a complete diagnosis by itself.

When you ask the cardiologist to interpret a single tracing without knowledge of the history, he will have to be conservative and give much less information than if he had clinical facts available. If he suggests a diagnosis on the cardiograph alone, there will be a percentage of error. On the other hand, when a cardiograph is taken to supplement or complete a thorough examination, and the tracings read in the light of clinical facts, the additional information which this examination provides is often of the greatest value, so that a cardiovascular examination cannot be considered complete without it.



OBSTETRICS

Posture of the Patient in Labour

Ross Mitchell, M.D.

In Great Britain and Ireland the left lateral posture of the woman in labour is generally employed, while in other countries the dorsal posture is favoured. Each has its advantages and custom should not lead the obstetrician to use one posture slavishly.

The left lateral posture is better adapted for deliveries in the home. For the younger men of the profession in Greater Winnipeg that means little, since in the year 1945 the percentage of live births in Winnipeg hospitals and maternity homes was 98.7% (in 1940, 97.1%). Older practitioners can recall the days when only abnormal maternity cases were sent to hospitals, and until recent years all deliveries in rural Manitoba were domiciliary. The ordinary bed does not lend itself well to the delivery of a patient in the dorsal decubitus. To deliver a patient in the cross-bed position entails the presence of at least one assistant and preferably two, in addition to the anaesthetist, or the ability of the doctor to make a sling out of a sheet, a device which is not included in our present day obstetrical teaching. With the patient in the left lateral position, the doctor can better control the exit of the head, especially if the patient is restless, flexion of the head is encouraged, and thus laceration of the perinaeum is minimized. Munro Kerr in his "Operative Midwifery" states that the Sims' (left lateral) position is one of very great advantage when manual rectification of faulty positions is attempted. He instances impacted breech, internal version and manual rotation of the head in persistent occiput posterior. To these might be added difficult delivery of the shoulders. In the dorsal posture, unless the patient's buttocks are over the end of the table, the head cannot be sufficiently depressed to enable the anterior shoulder to engage under the pubic arch if there is any disproportion between the shoulders and the pelvis.

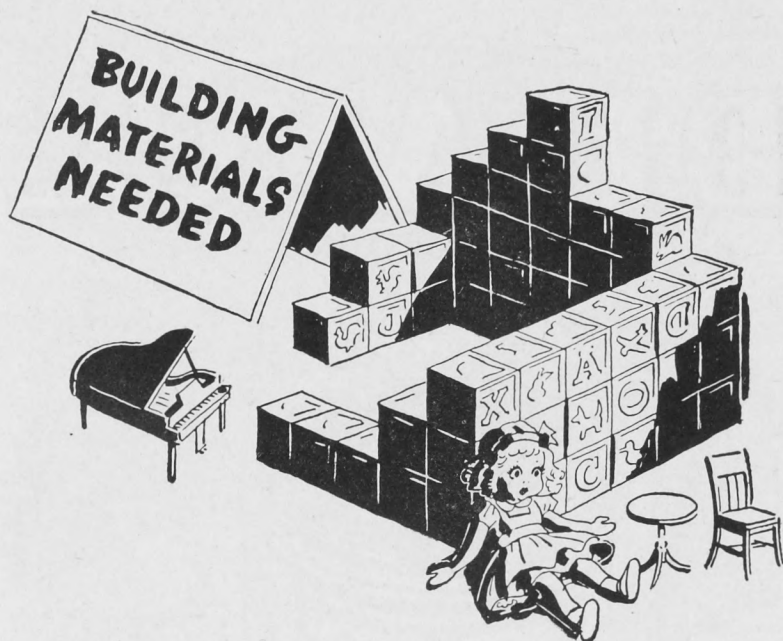
The dorsal posture is the best position for carrying out an examination, e.g., to determine the position of the presenting part, for applying forceps or performing version and for the management of the third stage. For the writer, it is always harder when the patient is in the Sims' position to figure out the degree of rotation of the head and whether the occiput lies to the right or the left, and also to apply forceps. This, however, is only an individual opinion. The dorsal posture is more suitable for hospital practice, as a better surgical technique can be carried out.

Two other postures have a limited field of use. The knee-chest or knee-elbow position is especially useful in prolapse of the cord and in replacing a retroplaced gravid uterus. The Walcher, or hanging-legs position, is used in cases of contracted pelvis, to increase the available conjugate at the brim. The weight of the legs drags down the anterior part of the pelvic brim, increasing the true conjugate by about 1/6 inch, (.4 cm).

Among primitive peoples the squatting position is favored. This utilizes the force of gravity and allows the utmost power of the accessory muscles but if labour is at all prolonged it is exhausting and it tends to bring about lacerations and prolapse. The practice of delivering patients in the squatting position began only about 250 years ago, and is said to have originated with Mauriceau. Prior to that time the obstetrical stool was used even in the days of the Pharaohs.

The present practice in the teaching hospitals of our medical school is to employ the dorsal posture, whereas years ago when the traditions of Edinburgh and the Rotunda were strong the left lateral was favored. Probably the change was for the better, and this writer would not alter the present teaching, but it is well for an obstetrician to be versatile, and to have more than one string to his bow when difficulty presents itself. It would not be amiss for our students in obstetrics to see some deliveries effected in the left lateral position by a practitioner skilled in that art.





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Hospital Clinical Reports

Reported by J. M. Whiteford, M.D.

St. Boniface Hospital

Reported by F. G. Stuart, M.D.

Clinico-Pathological Conference

St. Boniface Hospital

April 4th, 1948

Mrs. H. McC. Age 54 years. Admitted March 17th, 1948.

Entrance Complaints

Chest pain during November, 1947.

Dyspnoea since November, 1947.

Wheezing since December, 1947.

Cough since December, 1947.

History of Present Illness

This lady had been perfectly well until November, 1947, when pain was first felt in the chest. She localized it to the back of the chest slightly below the level of the shoulder. It came on intermittently and lasted about a minute. It was sharp in character and was accompanied by dyspnoea. Radiation around to the front of the chest was noted.

Also about this time she began to find that exertion induced dyspnoea.

Shortly after, in December, she developed a "chest cold" with a wheezing cough and the production of slightly mucoid sputum. The chest pain now disappeared but the dyspnoea on effort and the wheezing remained.

In mid-January, 1948, she developed an acute illness featured by chills at the onset, a temperature of 103° and a sore throat. She entered a hospital in the country where a pneumothorax with collapse of the left lung was diagnosed. Penicillin was given for her acute symptoms and the pneumothorax was treated by aspiration of air on two occasions ten days apart. After about two and a half weeks in hospital her acute symptoms had subsided and she was discharged. She still had dyspnoea on exertion and some coughing and wheezing. After discharge she was kept under close observation. The left pneumothorax appeared to be persisting, indicating that air was being trapped in the left hemithorax. She was referred to St. Boniface Hospital and was admitted on March 17th, 1948.

Physical Examination

Pulse 100, Temperature 98°, Respiratory rate 22.

Chest movements were noted to be poor. Tactile fremitus was absent over the left hemithorax. Breath sounds were absent over the left upper lung field and diminished over the base. Hyper-resonance was elicited on percussion over the left

side of the chest. The cardiac apex was markedly shifted to the right and the heart sounds were audible on the right side only.

A P.A. film of the chest at this time revealed absence of the usual lung markings on the left side except for a small area above the apex of the heart. The intercostal spaces were widened. The cardiac shadow was displaced to the left. The left hemidiaphragm was depressed. These features were considered evidence of a large accumulation of air in the left hemi-thorax with associated collapse of the left lung.

Laboratory investigation revealed no significant abnormalities of the blood. The sedimentation rate was 7 mm.

Differential Diagnosis

Air was obviously entering the left half of the thorax and becoming trapped there by a check valve mechanism. The patient's history of respiratory distress suggested that this had been going on for about four months.

The problem on admission was to determine whether the air was enclosed in a large balloon cyst of the lung, filling the left side of the chest, or whether it was free in the pleural space. If the latter, was the pneumothorax due to a ruptured cyst or a broncho-pleural fistula? The x-ray picture was compatible with any of these possibilities because from the standpoint of radiographic anatomy a large balloon lung cyst is identical to a pleural space distended with air.

The physical signs also are non-specific, being a lack of breath sounds and hyper-resonance.

Aspiration of a large balloon cyst is of only temporary benefit as air re-enters the cyst through its communication with the respiratory air-way as fast as it is removed. Massive tension pneumothorax from a ruptured cyst or broncho-pleural fistula behaves likewise for a similar reason.

One is thus led to the conclusion that direct examination of the inside of the thorax offers the best opportunity for making a diagnosis. This may be achieved by the thoracoscope or surgical exploration. Where removal of the cyst is contemplated because of significant symptoms, the latter is the better choice.

Before proceeding with exploration it is important to determine the condition of the collapsed lung. This is best achieved by the instillation of Lipiodol into the bronchial tree. By this procedure bronchiectasis or abscess cavities will be visualized.

A bronchogram in this case after a few hours continuous suction of air by a needle through the

chest wall revealed some re-expansion of the lung and a normal bronchial tree. The latter was not entirely unexpected because sepsis does not develop as readily in lung compressed by air as in cases where the collapse is secondary to bronchial obstruction.

Operation

On the 23rd of March, 1948, the left hemithorax was entered through an anterior approach with the patient anaesthetized by the intratracheal method with positive pressure. The parietal pleura had a bluish color and appeared to be stretched. On passing through it the left lung was found to be about two-thirds collapsed. A cyst about $1\frac{1}{4}$ inches in diameter was seen projecting from the left apex. It was removed. Numerous smaller cysts were seen over the surface of all the lobes. One of these in the lower lobe was found to be torn. This was considered the cause of the pneumothorax. Because of the multiplicity of cysts removal of them all was out of the question. It was felt that recurrence of pneumothorax by future rupture of one of the cysts would be prevented if the visceral and parietal layers of pleura could be made to adhere to one another and thus obliterate the pleural space. Sterile talcum powder was dusted into the pleural space with the hope that a sterile effusion would ensue and result in adhesion formation. The lung was re-expanded and a tube left extending into the pleural space to which a continuous suction pump was attached. X-ray films made a few days after operation showed that the lung remained expanded.

Discussion

Operation established the diagnosis in this case. Surgery is becoming more popular in the treatment of lung cysts. The cyst may be removed alone or a lobectomy or even pneumonectomy may be necessary. Attempts to treat the cyst by aspiration or drainage generally result in its becoming infected.

By way of contrast with this case films of a 59-year-old male patient from Deer Lodge Hospital were shown. In the latter case a large quantity of air with almost complete collapse of the right lung was known to have been present for at least four years. It had been found when the patient offered to enlist in the Veterans' Guard. He had no symptoms or disability. A large balloon cyst of the right lung was suspected. Because removal was not contemplated a thoracoscopic examination was done. This resulted in a beautiful demonstration of a huge lung cyst. The tip of the thoracoscope had pushed the cyst wall ahead of it and air which entered around the trocar in the chest wall accumulated in the pleural space. The cyst stood out as a thin walled air-containing

cavity of large size, surrounded by a thin layer of air in the pleural space. This cyst had apparently caused considerable compression of the lower lobe and had replaced the upper lobe.

With regard to the etiology it is generally surmised that these cysts are congenital in origin but there is some evidence to suggest an acquired nature.

Rupture, haemorrhage and infection are the usual complications associated with cysts.

Winnipeg General Hospital

Reported by J. W. Whiteford, M.D.

A Case of Paget's Disease with Congestive Heart Failure and Complications

Dr. F. G. Allison

Dr. Allison presented the case of a man of 70 who was admitted to this hospital on February 11, 1948, and died two weeks later. Five weeks prior to admission he had first noticed pain in the right ankle, radiating to the hip, aggravated by weight bearing and movement. He also complained of shortness of breath for one year and impaired hearing for an indefinite time. On examination there was orthopnoea with distended neck veins and the liver was palpated a hand's breadth below the costal margin; there was also some pitting. Blood pressure was 130/60-70. The left tibia was bowed and irregular; in the soft tissue of the right thigh there was a hard, tender mass.

Haemoglobin was 70%, white blood count 11,000, sedimentation rate 75 mms. Blood calcium was 10 mgm.%, blood phosphates 5 mgms.%, acid phosphatase 14.5 King units, and alkaline phosphatase 2,842 King units. Electrocardiogram was normal. X-ray of the chest showed an enlargement of the heart and a density in the left lung field. Other X-rays showed widespread Paget's disease and calcification in the soft tissue tumor of the right thigh.

Despite supportive treatment, including salyrgan, etc., his blood urea nitrogen rapidly rose to 94 and the man died on March 30, 1948. This was a case of heart failure without evidence of coronary disease, mitral disease, or hypertension. A high pulse pressure was combined with a low diastolic pressure, and in such cases four conditions must be considered: (1) patent ductus arteriosus, (2) incompetence of the aortic valve, (3) arterio-venous aneurysm, and (4) hyperthyroidism. As a result of recent reports, a 5th condition is now added to this list—Paget's disease. Approximately three years ago Edholm, Howarth and McMichael reported 50 cases of Paget's disease complicated by heart failure. 30% of these showed a high pulse pressure with an enlarged heart similar to that found in arterio-venous aneurysms. Their work

demonstrated that the blood flow through bone affected by Paget's disease was in the neighborhood of twenty times normal. It is postulated that in such bone there are present multiple small arterio-venous shunts, with consequent effect on cardiac output and eventual heart failure. Thus in all heart failures with a high cardiac output Paget's disease should be considered. Further, since digitalis lowers venous pressure and decreases the cardiac output, it is contra-indicated in the treatment of high output heart failure.

Dr. D. W. Penner remarked that Paget's disease is a disease of bone with an age incidence of 30 to 80 years, which is usually polyostotic but may be monoostotic. There is a slight preponderance in males and there is possibly a familial tendency. The common sites in order of frequency are pelvis, lumbar spine, femur, skull and tibia. In the active phase there is rapid bone absorption with the formation of vascular fibrous connective tissue. Later new sclerotic bone is laid down. Fractures are the commonest complication. 10% of cases show the development of osteogenic sarcoma, usually in a single site. This case at autopsy showed (1) widespread Paget's disease, (2) heart failure with no cardiac lesion, (3) emphysema, (4) three primary foci of osteogenic sarcoma in sternum, vertebra and ilium with widespread metastases, including a metastatic tumor in the left lung.

Dr. W. A. Gardiner emphasized the common complication of transverse fractures and noted that they almost always healed very easily.

Dr. W. F. Perry briefly outlined the use of phosphate estimations in the diagnosis and the different techniques employed by King and Bodansky.

Dr. King, of Baltimore, Maryland, reported having seen a case of Paget's disease in a child of 8 years whose entrance complaint was deafness. He also noted that Paget's disease might present with any of several symptom complexes, including (1) deafness, (2) blindness, (3) superior orbital fissure syndrome, and (4) platybasia. He also noted that satisfactory results had been obtained following cerebellar decompression in platybasia.

Common and Uncommon Conditions in Infancy

Dr. Medovy presented a series of cases of disorders of infancy, with colored slides illustrating each.

1. Subcutaneous fat necrosis of the newborn: This condition is recognized by the presence of areas of induration of the skin and subcutaneous tissue, somewhat similar to frost-bite on palpation. The areas have the consistency of hard tallow and do not pit on pressure. Several causes have been noted as follows:

(1) Forceps pressure applied during delivery.

(2) The fat of the newborn melts at a higher temperature than that of an adult, containing about 20% less oleic acid.

(3) Exposure to low temperatures has also been postulated as a cause. The treatment is expectant since the condition is benign and resolves spontaneously within four to five months.

2. Methaemoglobinaemia: This condition occurs in infants who are being given formula containing well water which has been contaminated by excess nitrates. This is commonest in children who receive formulas with a relatively large amount of water, that is, formulas using powdered milk. This condition resolves spontaneously upon elimination of the contaminated water from the diet. Dr. Medovy reports seeing six cases personally during the last year and has had a further ten cases reported by letter. The diagnosis is made on observation of the baby, which is cyanosed and has been on formula of well water; usually the blood is positive for methaemoglobin.

3. Cystic hygroma of the neck: Several methods of treatment have been in use for this condition, including injection of sodium morrhuate to induce sclerosis and surgical excision of the cystic mass. Dr. Medovy reported a case of a newborn child which resolved spontaneously, leaving only a slight excess of skin in the area.

4. This was a case of the baby of a diabetic mother born at the end of the 8th month of pregnancy, weighing 10 lbs. on delivery. Dr. Medovy noted that whenever the weight of the newborn infant is considered excessive the possibility of diabetes in the mother should be considered, either at the time or as a possible eventuality. This infant was given glucose by mouth from birth to prevent possible insulin shock. On the third day sweating and slight twitching were noted, and on the fourth day the infant developed a temperature of 104. Physical examination was negative except for a mild pharyngitis. Penicillin therapy was begun and the following day the temperature was normal. Occasional cough persisted even after discharge from the hospital. At 1 month of age the baby was noticed to have twitching of muscles and on the following day had a convulsion. It was investigated in hospital chiefly because of the likelihood of the convulsion being due to insulin shock. However, the blood sugar was normal and blood calcium was 5.2 mgms. The infant responded satisfactorily to treatment for tetany of the newborn. Dr. Medovy drew particular attention to the slight respiratory infection noted on the 4th day of life and reported the observation made by Priscilla White to the effect that atelectasis is a very common complication in infants of diabetic mothers due to excessive sugar levels in the amniotic fluid.

5. This was the case of a cretin diagnosed at 18 months. At the time of diagnosis it had only two teeth, the hair was dry, the tongue was characteristic, and there was a large umbilical hernia. X-ray films of the wrists showed retarded growth to a level of 6 months. On treatment with thyroid this child improved rapidly and lost all physical stigmata, but in cases such as this where treatment is begun at a late date full restoration of mental capacity cannot be expected.

6. A full term infant delivered normally was noted on delivery to have what appeared to be a scar extending on each side over the lateral aspect of the trunk, from the paravertebral region around to the mid-axillary line. This condition is termed aplasia cutis congenita. The cause is unknown but is thought to be of local vascular origin, although the adhesion of amniotic bands has also been considered. The condition may affect the full thickness of skin in any area or may appear only as a bald spot. Dr. Elinor Black who attended the confinement, reported that there was present in the placenta a calcified plaque, approximately 5 cms. by .5 cms., situated about 10 inches from the placental margin. The cord had a velamentous insertion to the placenta and no vessels of any size ran to the plaque described above. On histological investigation this plaque proved to be the remnant of a parasitic twin and was not considered to be related in any way to the congenital skin lesion.

7. Dr. Medovy presented the picture of a relatively new development in inhalation therapy of all kinds in infants, i.e., the oxydome, a plastic dome which covers the head and shoulders of the infant as it lies in its cot, into which may be led any gaseous mixture desired. It has been used chiefly for administration of oxygen and the aerosol administration of antibiotic drugs.

8. This was the case of a male infant who appeared well until the age of 8 months, when he stopped eating. Shortly after this nystagmus was noted. He was first investigated in this hospital at the age of 3 years; at this time he weighed 16 pounds and showed marked cachexia. Examination showed a nystagmus with marked optic atrophy and a relatively large head. Bone development showed a level of approximately one year. X-ray studies of the skull showed the sella turcica to be completely destroyed. A diagnosis was made of Simmond's disease or pan hypopituitarism. This condition is relatively rare in children, only one case under the age of 10 years being reported in a series of over 100. Several possible causes were postulated, including cyst or tumor of the mid-brain and craniopharyngioma. At autopsy an astrocytoma was discovered.

9. A color film of the commonest type of case seen—normal baby.

Discussion and Presentation of a Case of Pre-Frontal Leucotomy

Dr. T. A. Pincock. Dr. G. Sisler. Dr. O. S. Waugh.
Dr. E. Johnson, Selkirk
History by Dr. Sisler

J. P. Age 66 years. Diagnosis: Manic depressive—depressed phase.

Family History: Negative.

Personal: Born in England in 1881. Came to Canada in 1911 at age of 30 years. Grade 5 education. Married in 1913. In 1917 his wife was committed to Selkirk Mental Hospital, where she has been ever since with occasional paroles. Prior to his first break-down in 1920 he was a street car motorman — continued this intermittently until 1927—since then he has done odd jobs, dishwashing, etc., and been on and off relief.

Personality: Described as a quiet, even tempered, sensitive, worrying person who tended to brood. Has been a heavy drinker to forget things since 1917.

Mental Illness:

1920-1924—In Selkirk Hospital—showed brooding, decreased activity, delusions of persecution, olfactory and auditory hallucinations. Probable as "improved," manic depressive, depressed catatonic stupor?

1924-1946—Worried about his wife, brooded, had frequent prolonged blue spells. Began to drink heavily to relieve these but found that it did not help much.

Sept.-Oct. 19, 1946—Admitted to psychopathic very depressed, agitated, self-accusatory, said "God had put the world's weight of sin upon him"; he felt he was being punished for drinking innumerable sins, causing his wife's illness, etc. lost interest in personal hygiene refused to eat. Some response to electric shock therapy but symptoms recurred about two weeks after his discharge.

March-April, 1947—Again extremely depressed, almost stuporous. Symptoms as before—trembling, speaking in monosyllables. Lost all symptoms of depression after 12 electric shock treatments.

May 19, 1947—Readmitted—symptoms had recurred only a few days after the last discharge—as before, tense, fearful, bit his finger nails to the quick, occasionally asked in a weak voice for treatment, preoccupied and ignored any attempt at conversation. Physical status normal. Blood pressure 130/75; fundi normal; slight radial artery thickening; chest emphysematous.

Aug. 11, 1947—Pre-frontal leucotomy. Remained here until Sept. 17, 1947, when sent to Selkirk Hospital for convalescence.

Smooth post-operative course; was up on the 5th day. Tended to be careless of his habits, soiling his clothes; acted in a rather silly manner.

trailing rolls of toilet paper after him, removing his pants on the ward, etc. The depression and agitation was replaced by a mild aphoria and disinterest in his situation. He whistled to himself, played cards alone, said he didn't care what happened to him. An attempt was made to do an I.Q. on September 3, 1947, 3½ weeks post-operative, but he was too uninterested in the test material to obtain a valid result—an I.Q. of 73.

Feb. 25, 1948—5½ months post-operative. A psychological test for gross organic brain disease revealed no indication of this. An intelligence test, in which the patient co-operated well, revealed a normal intelligence. The patient, who had been discharged from Selkirk on Feb. 14, 1948, seemed quite well in all respects. Since leaving hospital he had stayed with his daughter and she reported that he is cheerful, helps about the home, sweeps the walk, etc. He is no longer tense, depressed or irritable and does not bite his fingernails; his memory is good and he can play cribbage well. Physically he looks well and has put on considerable weight, is cheerful, active, and engages readily in conversation. He complains of no headache or weakness, is well orientated; he recalls his depression and his feelings of guilt and hopelessness, and says they were due to worry over his wife in Selkirk but that he has reconciled himself to this now.

Dr. Pincock reviewed the history of pre-frontal leucotomy in the treatment of mental disease, noting the following points: Fulton and Jacobson, of Yale, first observed the effect of interruption of frontal lobe pathways in the chimpanzee and its response of frustration. Next he noted that Bruckner reported the observation of a case of removal of the frontal lobe for tumor. Finally in 1946 the workers in several centres, notably Freeman and Watts in America, undertook operative section of tracts connecting the frontal poles of the brain with the thalamus. Of the original group upon which this operation was performed, approximately half were improved to such an extent that they were able to resume employment and of the remainder the majority were improved sufficiently to live at home; the minority remained institutional problems.

The general effect of this operation is a "bleaching" of the emotional tone. Immediately following operation the behaviour is immature, but improves gradually to a cheerful, affectionate, relatively uninhibited state. Freeman and Watts postulated that the operation temporarily destroys the faculties of foresight and hindsight, and that these are never completely restored. Surgical interference is felt to be justified if mental function is perverted and abnormal emotion is attached to this function, e.g., self-accusation, self-pity, etc. The general groups in which the operation has

been found useful are (1) excessive compulsive states, (2) tension states, including chronic psychoneurosis, (3) involutional states, and (4) certain types of schizophrenia. To date there is little evidence that the operation benefits patients suffering from epilepsy or those in the criminal psychopath group.

The second use of pre-frontal leucotomy is in the treatment of intractable pain due to a variety of conditions, including carcinoma, phantom limb, causalgia, tabes, etc. The operation does not reduce sensitivity to pain but it alters the attitude of the patients to such an extent that they are able to accept it more easily. It is chiefly of value in the treatment of those patients in whom the fear of pain is worse than the pain itself. It is expected that this operation will prove useful chiefly in the re-habilitation of patients to such an extent that they will become at least partially self-supporting and will reduce the number requiring institutional care.

Dr. E. Johnson, of Selkirk Mental Hospital, reported on the post-operative course of the patient mentioned above. He noted that this patient received no special care or re-education, and that for two weeks he was sloppy and generally careless about his dress and appearance. His condition gradually improved, and on discharge he was behaving in a normal fashion. Dr. Johnson re-emphasized the effect of the operation in divorcing ideas from emotions.

Dr. O. S. Waugh outlined briefly the surgical technique employed to achieve these results.

Question: Is post-operative epilepsy ever encountered?

Answer: Yes, it is a definite risk which must be accepted when considering an operation of this kind, although the incidence is low.

Deer Lodge Hospital

Reported by P. T. Green, M.D.

Clinico-Pathological Conference No. 28

Born 1897. Worked as carpenter and farmer.

In army in First World War. Had varicose veins ligated.

1912—Varicose veins tied.

1918—Discharged from army, complained of myalgic pains in shoulder girdle, dyspnea, and frequency of urination. Pensioned 10% for myositis. Urine normal.

1928—Investigated for frequency and urgency. Urine negative. Concentrated up to 1.025. Urine negative. BP 140/70. Pension reduced.

1931—Pensions re-instated because of osteoarthritis of back; complained of pains in limbs and back worse in wet weather. X-ray showed lipping.

1932—Admitted because of general aches and pains. Myositis and osteoarthritis diagnosed.

1935—Re-admitted because of pain and swelling of knees. X-ray showed osteoarthritic changes there.

1939—Recurrence of knee complaints.

7/2/47—Admitted to surgery because of infected left hand. Urine specific gravity 1.022; .02% albumin; moderate numbers of white blood cells. He had been complaining of some deafness for two years. Audiogram showed mixed deafness; given hearing aid.

18/10/47—Admitted complaining of poor urinary stream; difficulty in starting stream; terminal dribbling; suprapubic tenderness and discomfort; nocturia 5x, getting worse. Some vague epigastric fullness after meals.

An alert old man; good nutrition. Dorsal kyphosis; pulmonary emphysema; rhonchi left base; BP 135/70. Prostate slightly enlarged.

Chest plate—Hilar shadows somewhat accentuated; linear increase in density both bases. Hb 91%; specific gravity of urine 1.012; Albumin 0.1%. B.U.N. 14.4 mg%.

I.V.P. showed poor concentration of the dye. E.K.G. reported as probably normal. Gall Bladder visualization normal. Ba. series normal.

It was felt that this man had a benign prostatic hypertrophy, and a punch was done 6/11/47. There was a moderate amount of bleeding following the punch. Shortly afterwards he complained of substernal uneasiness and anorexia. General malaise. He was not eating or drinking much, and was vomiting occasionally. Prior to operation (same day) Hgb 89%; WBC 5.5; Urine—S.G. 1.008; Alb. 0.1%.

21/11/47—Intake 2160cc, output 2640. Hgb 65%; Vomiting. Blood in urine.

26/11/47—B.U.N. 75 mg% CO₂ Combining Power 33 vols%; Hematuria. Given 500 cc. molar lactate; and 500 cc. 5% glucose in water b.i.d.

30/11/47—Intake 2800 cc. Output 1260. Transfused.

3/12/47—Complaints as before. CO₂ 71 vols%; B.U.N. 90.9 mg%; Intake 2000, output 440. Hb 60%.

6/12/47—Still blood in urine. Prothrombin 60%; B.U.N. 90 mg%; Hb 37%; RBC 1.66; creatinine 18.8; Vomiting.

7/12/47—Hyperphnea; mentally not too clear. Intake 2500. Output 855. Rhonchi throughout chest. HB 31% RBC 1.57; WBC 21.0; Hematocrit 14%; chlorides 593, as NaCl. BUN 95 mg%.

10/12/47—Tongue dry; very dyspneic; noisy respirations; stuporous; some faintly twitching movements seen of limbs. Intake 2700; output 780; Hb 35%; Platelets 100,000. Smears are difficult to make. Will not smear out well. Cells are rather pyknotic. Differential shows 43% polys; 54% lymphs; 1% eos.; 1% monos; 3% normoblasts are seen per 100 wbc.

Patient became comatose and died in com. 12/12/47.

Discussion

The problem is that of a man, aged 72 years who first complained of urinary symptoms, frequency, at the age of 43 and who, at the age of 72, died following a transurethral resection.

Ten years following his initial complaint of frequency, he was investigated for frequency and urgency. We learn that his blood pressure and urine were normal. His next five admissions to hospital were for other complaints, mostly in the nature of degenerative joint disease. In February 1947, urine analysis showed .02% albumin and moderate number of W.B.C. Thus, over a period of 19 years, there is no mention of urinary complaints and we do not know if they persisted, recurred, or onset just before his final admission.

On his final admission, his complaints of poor stream, difficulty starting, dribbling and nocturia are those of any lesion causing bladder neck obstruction. The suprapubic tenderness and discomfort, together with marked nocturia, could mean an associated cystitis. As there is no mention of hematuria, tuberculosis or Schistosomiasis are unlikely causes, pyogenic infection being the probable cause. The mention of vague epigastric fullness is of little diagnostic help, but is often associated with chronic urinary sepsis.

Investigation then revealed a slightly enlarged prostate, a urine of low specific gravity, .01% albumin, and a BUN of 14 mgm %. The I.V.P. showed poor dye concentration. At this point some information about microscopic urine, amount of residual urine and renal function would have been of interest. Cystoscopy and study of upper urinary tract were not done—possibly considered inadvisable.

The possible causes of the bladder neck obstruction may then have been:

(1) **Benign Hyperplasia**—If the symptoms were persistently present from 1918, it was undoubtedly present to a degree.

(2) **Carcinoma**—Although not expected from the findings, the patient was in the right age group and no investigation for evidence of secondary tumor formation was done. Bone metastases might have been picked up—or missed—during the course of I.V.P. or Ba series. The report of the material from the resection is not given, but 5-15% of presumably benign prostates, contain malignant nodules. Hemorrhage, especially secondary, is much more common following resection of a prostate for malignancy than for benign hyperplasia.

(3) **Median Fibrous Bar**—Could have been causing symptoms. Again carcinoma is not ruled out.

(4) **Prostatitis, Tuberculosis and Sarcoma** can be readily ruled out.

(5) **Bladder Tumor**, calculus, or diverticulum are occasionally causes of bladder neck obstruction. Tumor and calculus are unlikely in the absence of hematuria and evidence of calculi in the upper urinary tract. Diverticulum can only be diagnosed objectively, so we cannot rule it out. As a cause of bladder neck obstruction, alone, it is rare, but usually accompanied by another cause. Calculi in the diverticulum, with hematuria frequently occurs.

Preoperatively then, we have evidence of benign, possibly malignant prostatic obstruction, with urinary tract infection and impaired kidney function.

Following operation, he suffered moderate bleeding and vague constitutional symptoms—general malaise, substernal uneasiness, anorexia, and occasional vomiting. We are not told what happened for 14 days, but on the 15th post-operative day he was vomiting; his output was good, and he had blood—gross? micro? in urine. His hemoglobin had dropped 24 points. On the 20th post-operative day, he still had some degree of hematuria and showed marked evidence of nitrogenous retention and acidosis. The possible causes for the latter are:

(1) That there was present a pre-existing chronic glomerulonephritis—there is no evidence for this.

(2) He developed an acute glomerulonephritis post-operatively. There were none of the cardinal signs recorded and his output remained fairly high until terminally.

(3) Malignant hypertension—he had a normal pre-operative B.P. had no signs of heart failure, and died within five weeks. We have no information about eye grounds.

(4) As a result of bleeding, he developed a pre-renal azotemia. Against this are the facts that the bleeding was not sudden and massive and oliguria developed terminally.

(5) Renal failure occurred as a result of transfusion or that he received sulfonamide therapy. These conditions are both accompanied by anuria.

(6) That he suffered a progression of a previous mild pyelonephritis with extensive impairment of kidney function. This is the most probable explanation.

(7) The presence of previous congenital anomalies, such as polycystic kidneys, is unlikely, in the absence of palpable abdominal mass or abnormality in the I.V.P.

The cause of the post-operative bleeding is difficult to evaluate, as we do not know how much occurred. It is mentioned a number of times, and was persistent at least from the 26 Nov. to Dec. 3. This could have had, first: **Local Cause**—from the

operative site, from a severe cystitis, or a local vascular lesion, such as a hemangioma. Or, it could have originated in the kidney with the cause of the uremic picture. If this were pyelonephritis, it is unlikely. Thrombosis of the renal vein giving hematuria usually occurs in heart failure, and is accompanied by pain—and apparently this was painless bleeding. Congenital defects can again be excluded with fair certainty. A **Systemic cause**, such as the blood dyscrasias, cannot be ruled out, as there were no pre-operative blood studies done. However, there is no mention of purpuric or other manifestations associated with these diseases. The probable cause of the bleeding was at the operative site, or in the bladder.

Development of a profound post-operative anemia in one month remains to be explained.

It resulted from bleeding. Hgb. pre-operative was 89%, no R.B.C. was done. He thus had a mild pre-operative anaemia, in the absence of any known bleeding. As no idea of the amount of bleeding can be formed, we must assume it was a factor, especially in the terminal week, when Hgb. dropped 29%. To explain the pre-operative anemia, and the apparent failure of transfusion to influence the downward course, chronic urinary sepsis plus onset of uremia was undoubtedly a factor. The appearance of normoblasts in the blood smear, and W.B.C. of 21.0, may have been a terminal phenomenon, or a result of hemolysis, which is said to occur in uremia, or a leukemoid reaction which, together with normoblasts and a low platelet count points to a myelophthisic anemia. As there is no mention of jaundice or other signs of hemolytic anaemia, a myelophthisic type secondary to carcinomatous metastases is a very good possibility. The low prothrombin time can only be explained on a nutritional basis plus bleeding.

Finally, there are the blood chemical changes to explain. On the 20th post-operative day he showed evidence of nitrogenous retention and acidosis; and a low c.o.₂ c.p. i.e. compensated alkali deficit. In spite of clinical progression, his c.o.₂ c.p. one week later would indicate an alkalosis. There is little doubt he was in profound acidosis, but due to failure to eliminate c.o.₂ (emphysema and respiratory depression) his blood alkali underwent a compensatory rise.

Summary

A 73-year-old man, with slight anemia, emphysema, and early signs of decreased kidney function, probably due to chronic pyelonephritis, underwent a transurethral resection for benign hyperplasia, possibly prostatic malignancy. Post-operatively he developed a profound anemia, due to bleeding, onset of uremia, and the presence of carcinomatous metastases in bone. The uremia progressed to death in coma.

Post Mortem Findings—General Description

The body was that of a well developed and well nourished adult male of 73 years of age and 5 feet 10 inches in length.

The pupils were equal and measured 4 mm. The face was pale and there was dried blood at the angles of the mouth. The tongue was coated and bloody and there had been multiple small hemorrhages from the mucous membrane of the tongue, hard palate and cheeks.

The anterior posterior diameter of the chest was increased.

There was pitting edema of the legs over the tibia and ankles.

Thoracic Cavity

There was 240 cc. of straw colored fluid present in the left pleural cavity and the apex was adherent with a few adhesions.

The right lung weighed 1089 gms. and the left lung weighed 730 gms.

The lower lobe of the left lung was congested and on sectioning bloody fluid was expressed from the cut surface but no beads of pus. There appeared to be areas of infiltration scattered throughout the lower lobe. The upper lobe was dry and crepitant.

Abdominal Cavity

There was a circular, irregular, white mass 1.5 cms. in diameter in the wall of the stomach at the level of the esophagus and about midway between the lesser and greater curvature. It was covered with mucosa.

The liver weighed 2325 gms. and had a yellowish with brown mottling color and appeared greasy.

The spleen weighed 240 gms. and was fibrous and dry.

The left kidney weighed 198 gms. and the right 180 gms. and both appeared pale with scattered areas of injected blood vessels. The cortex was pale and widened and the medulla narrowed.

Microscopic Findings

Heart—Section shows nothing of note.

R. Lung—The whole section is densely infiltrated by polymorph leucocytes and some plasmacytes which fill the alveoli.

L. Lung—Section shows atelectasis and minimal edema.

Liver—Section shows widespread infiltration of tumor cells with nodular masses in places. The cells resemble plasmacytes with typical cartwheel nucleus and acidophilic protoplasm.

Bone Marrow—Smear taken at autopsy consists chiefly of plasmacytes.

Spleen—The malpighian areas cannot be distinguished. The section is widely infiltrated by plasmacytes which fill the sinuses and in places form dense masses of plasmacytes.

Pancreas—There is scattered and in places dense infiltration by tumor cells similar to those seen in other locations as described above.

Stomach—Section of a tumor nodule on the wall shows tumor cells similar to those above described with typical appearance of plasma cells. These are hyperchromatic larger cells and there are mitotic figures present. The tumor lies entirely beneath the mucosa which is not invaded. There is also a small leiomyoma in the wall.

Adrenals—Section shows nothing of note.

Appendix—Section shows the lumen filled with fatty areolar tissue.

Kidneys—Sections show widespread infiltration by lymphocytes, eosinophils, polymorphs and plasmacytes. Many of the collecting tubules are filled with cellular granular casts. There is a marked presence of pink hyaline filled dilated collecting tubules in many of which foreign body giant cells are found. Some of the glomeruli are fibrosed, others are hyaline, but changes are striking. The walls of the collecting tubules show necrosis of the epithelium in many tubules.

Prostate—Sections show benign prostatic hypertrophy.

Myeloma

Multiple myeloma was first described in 1844 under the term "mollities ossium" by MacIntyre. Since then the disease has been observed with considerable frequency. It is a disease of old age and hence becomes more common as the average age of the population increases. As there is some indication that therapy of a reasonably effective nature is being developed, diagnosis is of more than academic interest. The physician will have to become more myeloma conscious, as his patients enter the older age brackets.

The disease can be regarded as a malignant degeneration involving the plasma cells—the origin of these cells is still somewhat in doubt.

The disease affects males somewhat more than females, and is seen particularly in the 50-60 age group, although it does occur in younger patients. Most cases appear to arise in the bone marrow but extramedullary plasmacytomas also occur, and will be discussed below.

The disease may be drawn to the physician's attention by symptoms referable to one of several systems:

1. Skeletal

The patients often present themselves complaining of general rheumatic aches and pains. Pain in the chest or back is the predominant symptom in 86% of cases. This pain is often dated to some traumatic incident. It is slowly, but steadily progressive, like the pain of metastatic malignancy but unlike the latter does not tend to become worse at night.

Local bone tenderness is found in many cases even in the absence of fractures. These fractures occur in 16% of cases, not including compression fractures of the vertebrae. These later fractures produce foot pains and paraplegia in 14% of cases. The thoracic cage may become deformed, producing the dorsal kyphosis of emphysema, with cough and dyspnea.

Bone tumors may appear, especially in the skull and flat bones and also in the shafts of long bones.

2. Hematological

Progressive, refractory anemia with its weakness, malaise, and loss of weight may be the presenting complaint. In some cases bleeding phenomenon are seen and are often not associated with any disturbance in bleeding and clotting times, but there may be absence of clot retraction; when this occurs there is almost always a high serum globulin.

3. Renal

Progressive renal failure, ending in uremia is another manifestation of this disease. These cases are usually associated with presence of Bence-Jones proteinuria, and at autopsy there is a pathognomonic renal lesion found—The glomeruli are fairly normal, but the tubules are plugged with hyaline casts and foreign body giant cells are seen about these.

4. Solitary Myelomas

In rare occasions a solitary myeloma tumor is found outside the marrow. Most often these occur in the nasopharynx. (The first case was described in 1904). About 50% of these are malignant, and lead to death within two years in spite of extirpation, and x-ray radiation. The next commonest site is the conjunctiva, and there is a good prognosis in these cases as a rule.

Rarely, other sites are involved. Six cases have been reported in the stomach—interestingly enough one was recently discovered at the St. Boniface Hospital.

Diagnosis

The early diagnosis is based on sternal puncture, when there is seen an increase in plasma cells. Plasma cells in the marrow are also increased in other diseases, notably liver cirrhosis, sarcoidosis; secondary malignancy; lymphogranuloma venereum. However, these are normal plasma cells, whereas in myeloma the plasma cells are abnormal being larger, having larger nuclei, often multiple nuclei; no Hof, more vacuolated cytoplasm, more open nuclear pattern, and at least one nucleolus, and usually this is a large nucleolus, a general characteristic of malignant cells. The cytoplasm also seems to be shed off from these cells more readily than normal.

The marrow puncture will often make the diagnosis a year before x-ray of the bones show any changes.

Bence-Jones proteinuria is also a suggestive finding. This can occur in other bone marrow lesions, however.

Hyperproteinemia, with great increase in the globulin fraction is a characteristic finding of this disease. The red cells tend to agglutinate, and it may be very difficult to count them in a counting chamber because of this. The sedimentation rate is rapid, almost always being over 100 mm/hr. and almost never under 40 mm/hr. The peripheral smears may show a characteristic greasy texture on smearing and there is a bluish background when stained. Plasma cells may be seen peripherally.

These cases have been called "plasma cell leucemias" but are probably all advanced cases of myeloma. Associated with the high serum protein is a high serum calcium. Alkaline Phosphatase may be somewhat elevated.

Diagnosis

This disease should be suspected if:

- (1) Multiple bone tumors are found.
- (2) Pathological fracture occurs, especially of ribs.
- (3) Excretion of Bence-Jones protein.
- (4) Lumbar pain with signs of early paraplegia.
- (5) Unexplained increasing refractory anemia.
- (6) "Chronic Nephritis" and nitrogen retention with normal blood pressure.

Confirmation—Sternal puncture; X-ray.

Treatment

Because of the hyperglobulinemia in this disease, which resembles that seen in Kala-azar, it was decided to try the same drugs effective in this later disease here. It was found that the diamidines—stilbamidine and pentamidine (which, incidentally do not contain antimony) were effective in producing regression of the tumors and of symptoms when used in myeloma. Interesting morphological changes are also seen in the plasma cells during this treatment. While the disease is not cured, still some patients are relieved of symptoms and can go along comfortably for undetermined periods of time. It should be pointed out that these drugs are only effective when the patient is on a protein deficient diet. One case has also been reported, that was relieved by urethane.

Further developments are expected in this field.



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MONTREAL CANADA

Medico-Historical

J. C. Hossack, M.D.

Medicine in Egypt

The first medical men whose names we know were Egyptians and the first medical writings were in hieroglyphics. One is tempted to remark that in all ages doctors have preferred this form of writing and still do, judging by their usual calligraphy! Somewhere around 3000 B.C. there flourished a physician by the name of Sekhmet-an-ah of whom we know only that he "healed the king's nostrils." Much better known is the name of Imhotep who was vizier, architect and physician to the Pharaoh Zoser. If we travel to Sakkarah we can still see evidence of his architectural skill in the Step Pyramid the oldest of all the pyramids. Perhaps because of his position he received credit not all together his due but he appears to have been a skilful physician, so skilful indeed that in time he became deified and many Egyptians included him among their household gods. In fact in the opinion of some modern authorities, to him rather than to Aesculapius should be given the title of Father of Medicine.

Imhotep was, in a sense, the only god of medicine. All the gods and goddesses, however, were concerned with healing if for no other reason than the fact that every part of the body was associated with a god or a goddess. There are extant lists of organs and parts of the body—23 in one case, 36 in another—with the names of the supervising deities. Each list ends with the words "there is no part of the body without a god." It was therefore not uncommon to invoke the aid of several deities and so we find, for example, in an incantation "O Horus, O Ra, O Queb, O Osiris, O Shu, O Hek, O Nut." One can imagine the blasphemies a modern medical student would commit when coming to the last three! One should mention, however, that one god—the ibis-headed Thoth—did have some claim to medical recognition for the story goes that a priest walking by the Nile saw an ibis (doubtless suffering from intestinal sluggishness) fill its long curved beak with water and discharge the contents into its rectum. Thus was born the clyster or enema.

Now, before we can properly comprehend medical treatment as applied by the ancient Egyptians we must first of all have some understanding of their conceptions of sickness and death. Those were completely different from the ideas held by ourselves. To us magic has no place in etiology and sickness we know may lead to death. Moreover we realize that death comes in time to all of us. What, if anything, lies beyond the grave we do not know although it is the subject of

earnest thought. To the ancient Egyptian magic and violence were the sole causes of sickness. Sickness, moreover did not lead to death. Indeed in a sense there was no death. The "dead" king lived and was spoken of and written about as living. "Have ye said that he is dead? He dieth not." Even the words "dead" and "death" were avoided. The dead were referred to as "those yonder" and death as "attaining blessedness" or "passing away." These expressions seem so modern for nowadays, also, people do not "die," they "pass away" or "depart." But, to the Egyptian, death was merely an act of translation to another sphere, in the case of the noble to the skies, in the case of the ignoble to the underworld. Death in this sense was recognized to exist. It came as a breath which entered the left ear. (Through the right ear came the breath of life). Death was, therefore, an invisible influence which was ultimately responsible for a change in the form of life and which could also cause sickness. Although it was an inevitable end bringing in its train supernatural bliss in a state of immortality yet there was no desire on the part of any Egyptian to accept it if it could be postponed. Hence the use of red amulets, magically equivalent to blood and of yellow objects, magically equivalent to the sun—both life givers. This has been explained in "Magic and Medicine."

Although death was regarded as a cause of sickness there was no thought of contagion as we understand it. It was rather a spiritual affair in which the spirit of dead men or women might afflict the living. This was the reason why no one, including physicians, would willingly touch a dead body except the embalmers. Although the practice of embalming was applied to animals as well as to human beings and was universal, yet the physicians had no opportunity to see the process and for that reason there was little knowledge of anatomy. Handling the dead resulted in the practical ostracism of the Egyptian undertakers. This was not due to any respect for the dead but rather to the belief that even indirect contact with a corpse was hurtful to the living.

The Egyptian belief in immortality was profound and universal. In no other race have people so lived only to die. It was a purely physical immortality that was looked for and believed in. The belief doubtless had its origin in the almost perfect preservation of the bodies uncovered by jackals or by the shifting of the sands which covered the desert graves. Efforts were bent to preserve the bodies still more completely and gradually there developed an elaborate system of

funerary rites. Although these rites are scarcely a medical topic the strange and unique process of embalment is worth a note.

The undertakers of those days were priests and the office was hereditary. They had no "parlours" but erected a booth or tent near the tomb and to this was borne the corpse. It was laid upon a table and stripped, after which an instrument was forced through the left nostril and into the brain which was then removed piecemeal. Next a long incision was made in the left side of the abdomen and through this were removed first the abdominal viscera and then the lungs. The heart was left in situ. Following this the body was doubled up and thrust into a jar of brine up to the neck. The head was covered with a resinous paste which prevented decomposition. The body lay thus for 70 days after which it was removed, washed and straightened. Little was now left save skin, bone and shrunken muscles, and this was put in a desiccating chamber where it remained until it was quite dry. In order to restore the fullness of the body, limbs and face, sand, mud or other packing was forced through incisions or pressed into cavities. Next molted resin was poured into and over the body until every crevice was filled. Then the cranium was packed with strips of resin-soaked linen and, after another application of resin, bandages were applied to the trunk and extremities. There were many swathings of bandages rendered adherent by the application of gum. During the process a priest recited chapters from the Book of the Dead and at appropriate times and places amulets were placed upon the mummy. While the embalmers were busy, the tomb and coffin-cases were being prepared, the latter bearing over the face a portrait mask as accurate as possible. A great deal depended upon the mummy being recognizable. The encoffined mummy was next stood erect for the ceremony of the "opening of the mouth" which magically enabled the dead man to live, eat and drink in his new world. Following this the mummy was carried into his tomb. In the case of kings and nobles elaborate precautions were taken to hide the entrance and protect the tomb from robbers who, however, seldom failed to smell out gold and get possession of it. Of the hundreds of tombs which modern archeologists have discovered only one or two have been found intact and the vast riches stored in that of the young Pharaoh Tutankhamen is evidence of the enormous amount of gold, jewels, and other precious objects which must have filled the tomb of long-reigning kings such as Thotmes III or Rameses II for all a Pharaoh's wealth was buried with him.

Apart from injury, and sometimes even then, magic was the accepted cause of disease. Chiefly the magic was wrought by possession by the dead

and consequently the doctor's job was to expel the evil spirit. Originally all doctors were magicians and called such. In treatment the magician called upon the disease, as if it were a person, to leave the sick man. Sometimes the remedy was addressed as if it were a person. Thus in a spell to cure catarrh "Spit out the slime, son of slime," and "Come verdigris, come verdigris, thou fresh one."

Treatment was of two kinds—the oral rite and the manual rite. The oral rite was the simpler being merely a spell to which the offending spirit was supposed to succumb. The spell included the name or names of the gods invoked and also the name of the patient so that there might be no confusion. The manual rite consisted of various gestures or physical procedures as for example the saying of the spell "over a cord with seven knots" or administering a prescription. The spell was supposed to reinforce the prescription and vice versa. As has always been the case with magical prescriptions some of the ingredients were offensive, and unpalatable to the patient and therefore by inference to his unwelcome tenant. This, however, was not always so for honey was used because, "though sweet to the living it is bitter to the dead."

Just as today the doctor-magician did not rely exclusively on one medicine therefore in the *Ebers Medical Papyrus* we find many alternative spells and prescriptions. Observant men found for themselves which were potent and which were impotent among their remedies. The castor oil plant, the root of the pomegranate, the seeds and juice of the poppy, all of these could be relied upon even when no spell had been uttered. Therefore the magic branched off from the magicians those who approached the matter of healing in a more scientific spirit. Even in the Pyramid Age there were doctors who were called physicians. To be sure magic still remained and religious ideas so permeated all the people that true scientific medicine was scarcely possible. Even the efficacy of active remedies was attributed to their magical nature. To the Egyptian a drug's active principle lay in the influence of a god.

The oldest medical document was found at Thebes in 1862. This is the *Edwin Smith Surgical Papyrus*. At the same time a medical document was discovered and it is referred to as the *Ebers Papyrus*. Much of our knowledge of Egyptian medicine and surgery has been derived from a study of these papyri. Although the *Smith Papyrus* is the older of the two it is written in a much more systematic and rational style. To the Egyptian as well as to all primitive peoples there was no mystery in man-inflicted wounds. There was therefore no indication for the use of magic. The necessity of other sorts being of supernatural origin

demanded supernatural aid hence the difference between the surgical and medical writings. In other words the surgeon merely repaired damage inflicted by man while the physician found himself opposed to gods, spirits and demons.

The Edwin Smith Papyrus (an edition of which is in the Medical Library) deals with 48 cases of wounds. In each case there is a description which includes the symptoms, diagnosis and treatment. Prognosis also is given as "a condition that I will treat," a "condition with which I shall contend," or "a condition I shall not treat," according to the gravity of the injury. The writer begins with slight injury to the scalp and advances step by step through skin and bone to fracture of the skull. The neck and thorax follow but there the papyrus stops. It is unfortunate that no more complete papyrus has been found although many copies must have existed.

The Ebers Papyrus is the longest and best known of the medical papyri. It was found in the same tomb as was the Smith Papyrus. Archeologists date it about 1500 B.C. but there is evidence that it was copied from much older records. Indeed one passage is stated (in the papyrus itself) to be of the First Dynasty (3400 B.C.). It is a collection of extracts from many sources. There is some reference to diagnosis but mostly the papyrus is a collection of prescriptions for specific ailments which are named. There are likewise some surgical references. Spells as well as prescriptions are included and, indeed, the papyrus begins with an incantation which will assure the successful usage of the remedies that follow.

Some of the drugs find places in our own pharmacopoeia — opium, castor oil and pomegranate bark for example. Others were rational if we recall the laws of magic. Thus by giving powdered pig's teeth to a dyspeptic it was hoped to give him also that animal's digestive powers. Some remedies owed their merit to divine association, just as in later days plants derived their potency from the planets under whose rule they were. Sometimes it is difficult to find even a magical rationale for the prescriptions save as a medium for the spell.

Everything mineral, vegetable and animal which existed in the country found a place in the Egyptian pharmacopoeia even to fly-specks. The latter with juice from the poppy were put on "dummies" and used to soothe children. Until recently, when dummies went out of fashion, the only difference between the old and the new was that the flies laid their own specks. Excreta were held to be of great value, especially the excrement of scribes. Urine was not regarded as harmful waste but, in the case of cows at least was called "the water of flowers." Herodotus tells an interesting story about the use of urine as a remedy.

The Pharaoh Pheron suffering from ophthalmia, consulted his physician who told him to bathe his eyes in the urine of a woman who had been faithful to her husband and had ever preferred him to any other man. Naturally the King thought that cure would be only a matter of minutes; so he told his Queen but her water had no effect. Then he went through his long list of concubines. If anything his eyes grew worse! Finally he sent agents throughout his kingdom and at last got a specimen that worked. When he was cured he gathered his women-folk together, burned them and married the successful urinator.

The ailments mentioned in the Ebers Papyrus are those that still afflict man-kind. Round worms were treated with pomegranate root. Constipation was a nuisance which called for many prescriptions including "half an onion in froth of beer." This was further described as "a delightful remedy against death." For diarrhoea also there were many remedies, some of great length. One included onions, elderberry, grapes and fresh lead earth. While taking it one cried in a loud voice O Hetu O Hetu. Sometimes the anus got a bit sore and then one was advised to use carraway and antelope fat as a suppository. Lest this should fail a number of alternative formulas were given ending with "the egg of the goose and the guts of the goose in equal parts and clap on the bottom." Such curt instructions would probably make sure that the troublesome patient would go else-where next time. The Egyptian Physician was a strong believer in beer. He prescribed it as sweet, bitter, sour, fermenting and fermented. He used also the froth and the lees. Most often he spoiled it by adding such things as garlic, cat's dung, the tail of a mouse, etc.

The section on Eye Diseases numbers nineteen complaints which include cataract and carcinoma. One remedy for bleary eyes included myrrh, onions, verdigris, cyperus-from-the-north, antelope dung, clear oil, and entrails of the quadrit animal. This was painted on with a vulture's feather. The magical reasons for including onions, verdigris, antelope dung and clear oil are obvious, for onions make the eyes water and so clear them, verdigris is green—a color of life, the dung of the antelope is, as it were, a concentration of a far seeing animal, clear oil suggests clear vision, and of course, the vision of the vulture is proverbial. Concerning the prescription an alternative was given in case one could not immediately lay his hand on a "quadrit animal." The alternative was "an ass's tooth, mix in water and apply around the patient's eyes so that he recovers quickly." The prescriptions for cataract include this which is captioned: To drive out cataract in the eyes: "Words to be spoken over verdigris mixed with beetle-wax. Add cyperus thereto and carefully

apply to the eye: Come Verdigris, Come Verdigris, Come thou Fresh one. Come Efflux from the eye of the god Horus. It comes, that which issues from the Eye of Tum. Come juice that gushes from Osiris. He comes to him, he drives away from him Water, Matter, Blood, Inflammation of the Eyes."

A combination of the oral rite and the manual rite is given in this remedy for cold in the head or, perhaps, catarrh: First the spell: "Spit it out slime, son of slime." Then the manual rite: "Grasp the bones, touch the skull, smear with tallow, give the patient seven openings in the head." Then a spell "Serve the god Ra. Thank the god Thoth." Then another spell said over the remedies: "Then I brought thy remedy for thee, thy drink for thee, to drive away, to heal it: Milk-of-a-woman-that-has-borne-a-son and fragrant bread." This is repeated again from beginning. Then a spell, "The Foulness rises out of the Earth, the Foulness." This is repeated four times. Then the final manual rite, "Put in the nose." The caption—To be spoken over the milk-of-a-woman-who-has-borne-a-son and fragrant bread.

Not only does the Ebers Papyrus devote space to gynecology but there is a special papyrus dealing with diseases of women. For menstrual irregularities douches of garlic and wine were given. Should this fail, fennel, wonder fruit, honey and sweet beer were mixed and injected. If labour were slow the following was "a remedy to cause a woman to be delivered: "Peppermint. Let the woman apply it to her bare posterior." A "remedy for a diseased breast" consisted of a plaster containing cow's brain and wasp dung applied while reciting a long invocation to Isis who herself had suffered similarly. Froth of beer appears again this time with dried excrement. It was a "remedy to allow the womb of a woman to slip into its place."

We could continue this at long and unprofitable length. The examples given show that medical practice was for the most part magical. We must, however, advance very many centuries before we find the old practice completely discarded. In 18th century France, urine was taken ("two or three glasses in the morning, fasting") for gout and hysterical vapours; and the flesh of crabs and vipers still appeared in the official pharmacopoeia of London in the days of Heberden.

As regards the ailments that afflicted the Ancient Egyptians they are the same as are still prevalent. Bilharzia infection was common. So were carbuncles, bites of snakes, skin diseases, headache, middle-ear disease and the alimentary disorders which are of every day occurrence in our times. Much has been learned by examination of mummies. Calculi were as common as they still are in Eastern countries. A predynastic

mummy revealed a large stone in his bladder. Gallstones were found in the body of a woman. Arterial disease was not uncommon and arthritis was usual, scarcely any elderly mummy examined failed to show it in greater or lesser degree in its rheumatoid form. One stele depicts a victim of poliomyelitis but mummification would prevent its recognition in the bodies examined. Bone diseases were frequently encountered. Pott's disease and hip joint disease show that tuberculosis existed 5000 years ago. The predynastic mummies had healthy teeth but after the Pyramid Age, alveolar abscesses and dental caries were common. One Pharaoh apparently had smallpox and also hydrocoele. Examples of vaginal and uterine prolapse, pulmonary adhesions and appendicitis have been found in mummies, as well as many examples of deformities such as achondroplasia, talipes, lordosis, etc. Among the most famous of the victims of deformity were the achondroplastic Queen of Punt and the heretic King Akhenaten and his daughters.

So far nothing has been said about medical education for, of course, there was a medical education. The doctors were priests and, as the many Egyptian deities had each his or her special organ or part it is natural to suppose that there were as many medical schools as there were temples. Furthermore it would be expected that the priests, doctors of each temple would specialize in the structure under the protection of the god or goddess served. This seems to be the case for Herodotus says: "Medicine is practiced among them on a plan of separation; each physician treats a single disorder, and no more thus the country swarms with medical practitioners, some undertaking to cure diseases of the eye, others of the head, others again of the teeth, others of the intestine, and some those which are not local."

Students entered as novices and learned over a period of at least seven years the lesser and the greater mysteries of their craft. They were given practical instruction in out-patient departments. There they were shown the technique of investigation—such as it was—and had a chance to become familiar with the phenomena of disease and with the ritual of treatment. Each student grew his own herbal remedies in the garden which lay behind each temple. When his training was sufficiently advanced he undertook the care of cases, keeping a record of the condition and the results of treatment.

After graduation he was admitted to the body of the profession. His clothing was a leopard skin and papyrus sandals. He washed himself in cold water twice each day and twice each night, and shaved himself every second day from head to foot. His fees at first were not great except in case of long illness for payment was gauged by the weight

of the hair which had grown on the head since the illness began. A patient could, of course, be generous if he wished. He lived well, however, eating of the "sacred" food and drinking the "sacred" wine. Furthermore he was exempted from all taxation.

If he were bright and especially if he knew the "right people" (always a useful thing) he could hope for a position on the Faculty. This step achieved there immediately opened before him the prospect of a court appointment. Then his fees would be large, he would have many slaves and at last could marry for the Royal Physicians were permitted to marry. Moreover the king's doctor ranked as a noble. When he was received in audience of the king he walked through rows of prostrate slaves and was announced as "He who understandeth the movement of the heart and is guardian of the anus." If he were lucky in his treatment there was, indeed, nothing out of his reach. More than one physician ruled Egypt through its Pharaoh.

In the ancient world Egypt was the centre of culture and learning. There were no arts or crafts before the Egyptians invented them, and by Egyptians were laid the foundations upon which the Greeks built their sciences. The latest discovery of today is linked in some way with the Nile. In their day the Egyptian physicians were acclaimed the best. Their advice was sought by the rulers of other countries. Homer says of Egypt, "Where each physician possesses knowledge above all other men." The law commanded that a doctor apply orthodox treatment in each case for four days, after which he was free to proceed as he chose without incurring penalty in the event of his patient's death. The records we have are of the orthodox treatment. What actual treatment may have been after the fourth day we cannot tell but perhaps it was much more rational and, because of this, was so successful that the reputation of ancient Egyptian skill was justly based.

We know that surgeons used clay as their modern successors use plaster, that they had a sort of adhesive tape, that they used splints and sutured wounds, that they ligated blood vessels, a practice which centuries later was revived by Paré.

If Egyptian practice sounds to us rather crude and ridiculous let us remember that they had no precursors, that they were themselves the original pathfinders and that they were the people who made and lit the torch of learning.

Suggested Reading

Magician and Leech, W. R. Dawson.
The Infancy of Medicine, Dan McKenzie.
Human History, G. Elliot Smith.
Herodotus "History."

Papyrus Ebers, S. P. Bryan.
The Mummy, E. Wallis Budge.
The Smith Papyrus, Breasted.
History of Medicine, Douglas Guthrie.
The Story of Medicine, Victor Robinson.

Dr. Gregory and the Moderate Man.

Dr. James Gregory, Professor of the Practice of Physic in the University of Edinburgh, was a man of vigorous talents and great professional eminence. He was what is called a starving doctor, and, not long after his death, the following anecdote was put in print, equally illustrative of this part of the learned professor's character, and of the habits of life formerly attributed to a wealthy western city:

Scene—Doctor's Study. Enter a grave-looking Glasgow Merchant.

Patient—Good morning, doctor; I'm just come to Edinburgh about some law business, and I thought, when I was here at any rate, I might just as weel tak your advice, sir, anent my trouble.

Doctor—And pray what may your trouble be, my good sir?

P.—'Deed, doctor, I'm no very sure; but I'm thinking it's a kind of weakness that makes me dizzy at times, and a kind of pinkling about my stomach—I'm just no right.

Dr.—You're from the west country, I should suppose, sir?

P.—Yes, sir, from Glasgow.

Dr.—Ay. Pray, sir, are you a gourmand—a glutton?

P.—God forbid, sir. I'm one of the plainest men living in all the west country.

Dr.—Then, perhaps you are a drunkard?

P.—No, doctor; thank God, no one can accuse me of that: I'm of the Dissenting persuasion, doctor, and an elder; so ye may suppose I'm nae drunkard.

Dr.—(Aside—I'll suppose no such thing, till you tell me your mode of life). I'm so much puzzled with your symptoms, sir, that I should wish to hear in detail what you eat and drink. When do you breakfast, and what do you take to it?

P.—I breakfast at nine o'clock. I tak a cup of coffee, and one or two cups of tea; a couple of eggs, and a bit of ham or kipper'd salmon, or may be both, if they're good, and two or three rolls and butter.

Dr.—Do you eat no honey, or jelly, or jam, to breakfast?

P.—O yes, sir; but I don't count that as anything.

Dr.—Come, this is a very moderate breakfast. What kind of dinner to you make?

P.—Oh, sir, I eat a very plain dinner indeed. Some soup, and some fish, and a little plain roast or boiled; for I dinna care for made dishes; I think, some way, they never satisfy the appetite.

Dr.—You take a little pudding, then, and afterwards some cheese?

P.—Oh yes; though I don't care much about them.

Dr.—You take a glass of ale or porter with your cheese?

P.—Yes, one or the other, but seldom both.

Dr.—You west country people generally take a glass of Highland whisky after dinner?

P.—Yes, we do; it's good for digestion.

Dr.—Do you take any wine during dinner?

P.—Yes, a glass or two of sherry; but I'm indifferent as to wine during dinner. I drink a good deal of beer.

Dr.—What quantity of port do you drink?

P.—Oh, very little; not above half a dozen glasses or so.

Dr.—In the west country, it is impossible, I hear, to dine without punch?

P.—Yes, sir; indeed 'tis punch we drink chiefly; but, for myself, unless I happen to have a friend with me, I never take more than a couple of tumblers or so—and that's moderate.

Dr.—Oh, exceedingly moderate, indeed. You then, after this slight repast, take some tea, and bread and butter?

P.—Yes, before I go to the counting house to read the evening letters.

Dr.—And, on your return, you take supper, I suppose?

P.—No, sir, I canna be said to take supper; just something before going to bed: a rizzer'd haddock, or a bit of toasted cheese, or half a hundred oysters, or the like o' that; and, may be, two-thirds of a bottle of ale; but I tak no regular supper.

Dr.—But you take a little more punch after that?

P.—No, sir; punch does not agree with me at bedtime. I tak a tumbler of warm whisky toddy at night; it's lighter to sleep on.

Dr.—So it must be, no doubt. This, you say, is your every-day life; but upon great occasions, you perhaps exceed a little?

P.—No, sir, except when a friend or two dine with me, or I dine out, which, as I am a sober family man, does not often happen.

Dr.—Not above twice a week?

P.—No; not oftener.

Dr.—Of course you sleep well, and have a good appetite?

P.—Yes, sir, thank God, I have; indeed, any wee harl o' health that I hae is about mealtime.

Dr.—(Assuming a severe look, knitting his brows, and lowering his eyebrows). Now, sir, you are a very pretty fellow, indeed; you come here and tell me that you are a moderate man, and I might have believed you, did I not know the nature of the people in your part of the country; but, upon examination, I find, by your own shewing, that you are a most voracious glutton: you breakfast in the morning in a style that would serve a moderate man for dinner; and, from five o'clock in the afternoon, you undergo one almost uninterrupted loading of your stomach till you go to bed. This is your moderation! You told me, too, another falsehood—you said you were a sober man; yet, by your own shewing, you are a beer swiller, a dram-drinker, a wine-bibber, and a guzzler of Glasgow punch—a liquor, the name of which is associated, in my mind, only with the ideas of low company and beastly intoxication. You tell me you eat indigestible suppers, and swill toddy to force sleep—I see you chew tobacco. Now, sir, what human stomach can stand this? Go home sir, and leave of your present course of riotous living—take some dry toast and tea to your breakfast—some plain meat and soup for dinner, without adding to it anything to spur on your flagging appetite; you may take a cup of tea in the evening, but never let me hear of haddocks and toasted cheese, and oysters with their accompaniments of ale and toddy at night; give up chewing that vile narcotic, nauseous abomination, and there are some hopes that your stomach may recover its tone, and you be in good health like your neighbours.

P.—I'm sure, doctor, I'm very much obliged to you—(taking out a bunch of bank-notes)—I shall endeavour to—

Dr.—Sir, you are not obliged to me—but up your money sir. Do you think I'll take a fee from you for telling you what you knew as well as myself? Though you are no physician, sir, you are not altogether a fool. You have read your Bible, and must know that drunkenness and gluttony are both sinful and dangerous; and, whatever you may think, you have this day confessed to me that you are a notorious glutton and drunkard. Go home, sir, and reform, or, take my word for it, your life is not worth half a year's purchase.

Exit Patient, dumbfounded, and looking blue.

Dr.—(Solus). Sober and temperate! Dr. Watt tried to live in Glasgow, and make his patients live moderately, and purged and bled them when they were sick; but it would not do. Let the Glasgow doctors prescribe beefsteaks and rum punch, and their fortune is made.

BOOK REVIEWS



Textbook of General Surgery, by W. H. Cole and R. Elman, 5th ed., 1110 pp. Appleton-Century Company, New York, 1948.

This is a textbook of surgery written by two prominent American surgeons. One of the authors, Dr. Warren H. Cole, is Professor of Surgery at the University of Illinois. We were privileged to hear his able presentations at the Canadian Medical Association meeting in Winnipeg last year when he discussed the problems of strictures of the bile ducts and intestinal obstruction. Dr. Elman is Professor of Clinical Surgery at the University of Washington in St. Louis. He is known to several of our profession who have undertaken post-graduate studies at that institution. The authors have made use of a most impressive group of their associates throughout the United States for advice and suggestions in the various sections of the text.

Generally the book parallels all the advances in surgery. Subjects which have been recently emphasized are given their proper position. Thus the modern concepts in pre-operative and post-operative care dealing with fluid balance and nutritional deficiencies and correction are included. There is a section on chemotherapy and throughout the book reference is made to the uses of the newer antiseptic drugs. For surgeons who have had war experience a most complete and interesting chapter on military surgery is written by Dr. Frank Berry, of Columbia University. Long sections on orthopedics, gynecology, neurosurgery and thoracic surgery provide the most recent knowledge in these particular specialties.

A just criticism of this very excellent textbook is the common failing of any single volume attempting to cover such a tremendous subject as general surgery. It is impossible in the scope of this or any such text to tell the whole story and to keep all portions of it up-to-date. One must be disappointed with the brevity with which certain rather important diseases are treated. Thus if one is especially interested in diseases of the colon such as ulcerative colitis, diverticulitis, and even carcinoma, he will find little more than essentials. On the other hand the sections on appendicitis and cholecystitis are fully and well elaborated with good ideas.

This textbook one would say is for undergraduates. For the student undertaking advanced work and the established surgeon it is not an all-purpose reference book. There is for them, however, at the end of each chapter a bibliography of material containing the best available references for further reading. As this is a book for students primarily interested in the principles of surgery, and these are well taught therein, there is no place

for technical explanations of operative procedures. Having heard Dr. Cole undertake his addresses on the subjects previously mentioned an essay by him on technique would be a most welcome contribution.

K. R. Trueman, M.D., M.Sc. (Minn.).



Ear, Nose and Throat: Symptoms, Diagnosis, Treatment. By George D. Wolf, M.D. Assistant clinical Professor of Otolaryngology, New York Medical College, New York. Pages 523 with 149 illustrations, including 25 with color. J. P. Lippincott Company, \$10.00.

This text has in a great measure met the need for a concise, practical treatise on the diseases of the Ear, Nose and Throat suitable for the general practitioner.

The etiology and symptomatology are concisely and briefly outlined and on the whole the treatment outline has been practical; though there are aspects of treatment with which not everybody will be in accord, but that is to be expected, as the emphasis is on treatment found useful by the author.

The illustrations are adequate and practical, stressing such points as proper methods of examination, proper positioning of head for nasal medication; methods of nasal packing; Eustachian tube inflation; antral puncture; tracheotomy—just to mention a few.

The addition of brief historical sketches on the anatomy of diseases of the accessory sinuses, the development of laryngeal instrumentation, etc., add to the interest of the volume as do also the illustrated case histories which dot the text and add to its teaching value.

For those interested in more detailed information regarding the various subjects under discussion, an up-to-date bibliography is appended to each chapter. The book is organized in five parts on the basis of symptomatology.

In Part I the Nose, Throat and Larynx are dealt with under such headings as Emergencies in Otolaryngology; head pain, vertigo; post nasal drip, sore throat, hoarseness, etc.

The subject of Emergencies is dealt with first and proper stress is laid on treatment of Epistaxis, post operative tonsillar hemorrhage and emergency tracheotomy.

The subject of headache is well outlined and modern concepts of diagnosis and treatment have been stressed.

Part II is confined to an outline of Aural conditions under such headings as earache, chronic otorrhea, impaired hearing and tinnitus.

Part III is confined to miscellaneous subjects such as swelling of the Salivary glands and miscellaneous complaints such as sneezing, snoring, coughing, etc.

Part IV deals with Facial Plastic Surgery and reveals the scope of cosmetic surgery today. However, from a practical point of view, it adds little to the text.

Part V deals briefly but adequately for a volume of this type with subjects related to Otolaryngology as allergy, avitaminosis, blood dyscrasias and a practical chapter on the antibiotics.

On the whole it is a well planned concise text and should prove a useful addition to the General Practitioner's library.



John W. Dafoe, by George V. Ferguson, Editor of the Montreal Star; The Ryerson Press, Toronto, pp. 127 with photogravure portrait. Price \$2.25.

This is a book of prime importance to all thoughtful Canadians. It is a sensitively drawn sketch of a great editor by his assistant, later his successor, on the Winnipeg Free Press. Yet Ferguson portrays him as more than a great editor wielding an influence similar to that of William Allen White of Emporia, Kansas. For Dafoe, politics were in his blood from the time when, still in his teens, he went to Ottawa as parliamentary correspondent for the Montreal Weekly Star and listened to the eloquence of Sir John A. Macdonald, Edward Blake and Wilfrid Laurier. From that day to the end of his life he existed in the turmoil of the political scene. Like Job's war horse he rejoiced in the heat of conflict, "the thunder of the captains and the shouting." As editor for over forty years of the Manitoba Free Press, as it was first named, and through his unique association with Sir Clifford Sifton, one of the ablest Canadians to hold public office, he was able to expound his views and to shape public opinion on all the great problems, not only of his adopted province, but of Canada, the British Commonwealth and of international affairs. He was enabled to do this because he was a man of vision, a student of political science often in advance of times, and a liberal without the capital letter.

As an editor Dafoe had the gift of drawing about him young men and women of promise and developing their powers. The impelling ideas which he championed were national unity, so ably expressed in his contribution as a member of the Rowell-Sirois Commission, and "one world" collective security through the League of Nations. Had his ideas been fully accepted Canada and the

world might have been saved the anguish of second world war.

To the Winnipeg citizen who absorbed the Free Press with his breakfast, the name of Dafoe was so familiar that while he was living it was hard to appreciate the full stature of the man. Just as one can take in the majesty of the Rockies only from a distance, so it is only now in reading of his achievements four years after his death that this true magnitude looms up. Though his death could be so devastating that his opponents would refer to him, in their politer moments, only as "that man Dafoe," he was one of the kindest and least self-seeking of men. When he was offered knighthood he refused the honor, because, he said, he wouldn't know what to do with it: didn't he carry out his own ashes and shovel his own side walk? Yet when distinguished visitors came to Winnipeg it was often Dafoe whom they first wished to see.

George V. Ferguson has the right touch for this sketch of his old chief, who in the delineation never appears stuffy or overbearing. He reveals him as a man who could walk with kings yet not lose the common touch. This work is a "must" for lovers of democracy.

Ross Mitchell



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EDITORIAL


J. C. Hossack, M.D., C.M. (Man.), Editor**Pre-Medical Instruction**

The requirements for admission to Medical Schools are almost yearly being increased. For some time our pre-medical course has been of two years and there is now a feeling that our students are at a disadvantage when compared with those whose pre-medical studies occupy three or even four years. It seems likely that soon candidates for admission will be required to have a B.A., or B.Sc. or perhaps even an M.Sc. Indeed who knows but that the day may come when our successors will, like Arnold of Villanova, be simultaneously doctors of law, philosophy, theology and medicine!

In the meantime the question that perplexes the Faculty Council is—what should be put into a third pre-medical year? The subjects which have been suggested include zoology, botany, chemistry and physics. Now, inasmuch as we have all been exposed to all of them, it might be interesting to see what permanent effect these studies have had upon us. How much, gentle reader, do you know about amphioxus? You will remember the days when we pored over the corpses of dead dogfish, etc., but how much do you recall of what you learned at these post mortems? I know that pigeons have no gall bladders but that is chiefly because I remember Hamlet's query "Or am I pigeon-livered and lack gall to make oppression bitter?" I would be hard put to it to give a satisfactory answer to any questions concerning pigeons (apart from their palatability) or upon rana esculenta or any other creature with whose "innards" I was at one time uncannily familiar. Then there is botany. Could you help me out by telling me half a dozen members of the compositae or solanaceae or cruciferae that are in daily use? I remember that there are five groups of inorganic chemicals (that's right isn't it?) but for the life of me I can't recall the members of those groups on the reagents used in their detection. In physics I am alas equally ignorant.

It is possible, of course, that I am an exception; that all my classmates and successors in labs and lecture rooms remember what I have forgotten but I don't think so. I have the idea that all my "gentle readers" are in the same boat: that the books and volumes of their brains are tabulae erasae when it comes to those subjects which introduced us to the study of medicine; nor would an extra year devoted to their contemplation have left us any less ignorant. My question is, wherein lies the value of subjects which, in a short time, are completely forgotten? They can be of value only if year after year they are referred to and

applied. Perhaps they should be but they are not. Otherwise they are of only temporary usefulness as means of training faculties for more practical application later.

Other subjects suggested are "a foreign language" and English. Again one might ask the gentle readers how well they can use the foreign languages, dead and living, in which they once passed examinations. I do not include, of course, those people who, by circumstances of birth or environment have been bi-lingual since childhood. Unless a foreign language is used daily its rudiments are soon forgotten. Those who are interested in languages will, without coaxing, learn one after another. The others who pay attention to learning a tongue other than their own are those who need that tongue in their business. The majority are satisfied to be monolingual knowing than everything worth while in every language from Africaans at the one end of the alphabet to Zulu at the other is quickly made available in accurate translation by people who know the language and the subject. Moreover, if we are to use our linguistic knowledge for the purpose of professional reading, one language is not enough. If, for example, we choose French we must then forego German and Spanish and Russian and Scandinavian and so on. Perhaps I am wrong here also but can you refute my arguments?

English is another matter. It is taught in the elementary and other schools but the scholars are terribly handicapped. All around are magazines, newspapers, the radio, novels, the movies, friends and enemies, most of them using English sloppily. To make matters worse good literature is anatomised and dissected (in school) so that a thing of beauty is transmogrified into a bloody hash of grammatical fragments. Poor Bill Shakespeare! How he has suffered, of how many ardent admirers has he been deprived, what antipathies has he aroused, just because he has been forced in disjointed pieces down pupils throats! A flower loses its charm when pulled to pieces, and where is Venus' beauty when the dissectors are through with her?

A person who is studying to become a member of a learned profession should have a good command of the language which he speaks and writes, and in which, some day, he may teach. Fortunately such a command is easy to acquire. Anyone who knows how to read has in that knowledge the "Open Sesame" to the vast treasury of English Literature, and through translations, to all the literature of all the peoples of all the ages. Therein is everything that anyone can want; comedy,

drama, tragedy; inspiration, amusement, instruction; pleasure at the time and lasting profit in the form of a larger, richer vocabulary, and the ability to express one's thoughts forcefully, strikingly, with clarity, with precision. But such reading must be undertaken for pure enjoyment, not as a task; the flowers of literature close and droop when touched by the shadow of an approaching examination. Give a student Ruskin's "Sesame and Lilies" and Arnold Bennett's "Literary Taste" and "How to Live on Twenty-four Hours a Day," give him these and let him explore for himself the pleasant and profitable realms of gold.

Three other subjects have been mentioned and they have my hearty vote. They are philosophy, psychology and logic. These are useful subjects the value of which will grow through the years. Originally physicians were classed as philosophers and the best physicians can still be so classed. Medicine was for centuries taught as a branch of philosophy and now philosophy might be taught as a branch of medicine. Psychology is a most logical inclusion in a pre-medical course. It is a subject that will prove perennially valuable. In these days especially, when the significance of mental processes in the making of symptoms is so widely recognized surely it would be wise to give instruction in the mechanism of these processes. And as to the inclusion of logic, what could be more logical?

There are two things that many students lack. These are the power of observation and the ability to think. One of the purposes of the biological studies is to train students to see what they look at. But their books hinder them. These tell the student what to look for and what he will see, and so prevent him from finding things out for himself. He memorizes what he reads, reinforces memory by what he looks at and so prepared faces his examiner successfully, after which his knowledge seeps quickly from him. Time, however, is limited. It would take too long for the student to find things out for himself. Only in problems of original research is there opportunity or chance of making original observations.

Perhaps you may not be familiar with the methods used by Robert-Houdin for the improvement of visual perception but you can hardly have missed the articles in lay magazines in which psychologists and others tell of the means whereby they quickly and greatly improve their students' powers of observation and concentration. One wonders if such a training could not be given here. It is one that all of us could take with profit, for only too often do we find in the literature mention of new signs, new symptoms and other facts concerning old diseases which would not have been new to us if we had been better observers.

Perhaps one of the reasons why we have to read so many journals is because we do not use our senses to best advantage at the bed-side.

It is a pity that there is no course on the Principles and Practice of How to Think. If there were such a course it would certainly include philosophy, psychology and logic. The Art of Thinking has concerned all the philosophers from Plato to Spencer. They link it with education which should be the methodical creation of the art of thinking. Is the education we give our children (from grade 1 up to their degree) of this sort? The methodical creation of the art of thinking is indeed education for education (ex-*duco*—I lead) means literally the leading out from a student of something that our instruction and his observation have generated in his mind. Do we really educate? Don't we rather just instruct?

The mental faculty upon which most stress is laid is memory. The lad with a good memory will get the prize at school but unless he has more than memory he fails to win the prize after he has left school. Osler, you will recall, condemned examinations because they were a test of memory only. He urged vigorously that students should be given time to think and that opportunity should be given them to actively apply thought in their preparation for practice.

The interne year gives us an opportunity to find out whether or not students can think and act independently as well as remember. Some can but many more accept without question the fashion of the day. Well, that is natural enough, but I sometimes think that more curiosity at the bed-side and less time in the library would pay them better. Fashions (medical and surgical) change but the patients themselves are little different from those whom Hippocrates, or Sydenham or Osler attended. These men won their laurels partly because of the extent of their knowledge but much more because of the way they gathered and applied that knowledge. They had, all of them, the seeing eye and the understanding mind. Therein is the highest best of the good physician. There are the things above all others that students should be taught, as far as they can be taught, by precept and by practice.

However, so long as standards are set we must meet them if we are to remain a Class A College, even though that means the inclusion of subjects which, while useful in themselves, are too remote from the bedside to encourage their retention in the memories of doctors-in-the-making. But let us try to make pre medical instruction as educational as possible, as permanently useful as possible.

There are two subjects which have not so far been mentioned, which are not usually found in such curricula but which, I believe, would prove

greatly useful to the student both before and after graduation. One of these is stenography—think of the time it would save in note-taking and history-writing. The other is elocution. The ability to use one's voice properly is a valuable one, not only during student days but later when papers and addresses have to be given. I think that a student would get more benefit, and more lasting benefit, out of these apparently irrelevant subjects than he would out of an extra year of zoology, botany, chemistry, physics and a foreign language combined.

And now let us see how they did things in 1224 when Frederick Barbarossa was King of the Two Sicilies and Emperor of the Holy Roman Empire. He was greatly interested in medical standards hence the following ordinance:

I. Of Physicians and Surgeons

a. To practice in all branches of medicine (and surgery also), and to bear the title of a physician, was permitted only to him who had passed an examination at Salerno, and received the state-license from the emperor or his viceroy. Violators of the law were punished in money and goods, and received one year's imprisonment.

b. Before the physician was admitted to an examination, he must have attended lectures on logic for 3 years, and on medicine and surgery for 5 years, and must have practiced under the direction of an experienced physician for one year.

c. Physicians were examined on the genuine books of Hippocrates, Galen, and Avicenna.

d. The surgeons must, in like manner, bring evidence that he had attended the lectures of the professors, and pursued for one year the curriculum which surgeons hold necessary, especially human anatomy. Surgeons of the first class were examined by three professors, of whom one teacher of surgery conducted the examination in the Latin language, and in the presence of the prosyndic and prorector of the nation of the candidate. The diploma was subscribed by all these persons, accompanied by the attestation of a notary, and bore the seal of the Faculty. Surgeons of the second class were examined in Italian and by two teachers only, and the diploma was then subscribed by the two examiners alone. The candidates must take an oath never to treat internal diseases, and they could not receive the title of doctor.

e. The physician must give information of the fact if an apothecary sold adulterated drugs.

f. The physician must not be guilty of collusion with the apothecary as regards the price of drugs; still less might he keep a drug store.

II. Tariff of Fees

a. The poor must be treated gratuitously.

b. The physician must visit his patients at least

each day, and, if requested by the latter, once also at night. For this he received, for every day of treatment:

a. In the city, or at his residence, half a tarenus, \$0.14.

b. Away from his residence, when

1. The patient paid his travelling expenses, 3 tereni, \$0.85.

2. The doctor paid his travelling expenses, 4 tereni, \$1.17.

Not much, you say, but in those days a cent bought a dozen eggs!



Complex Simple Fracture

To the Editor:

Realizing that the term "simple fracture" as generally defined is thoroughly inadequate to describe the trauma received in many so-called simple fractures, I have added a new definition to the simple and compound fracture nomenclature, i.e., "complex simple fracture" (Key, J. A., and Conwell, H. E.: *The Management of Fractures, Dislocations and Sprains*, ed. 4, St. Louis C. V. Mosby Company, 1946, pp. 41-43).

A complex simple fracture is a fracture which is not compound but which has received severe trauma to either or all of the surrounding soft structures, i.e., skin, muscles, blood vessels and nerves. The bony fragments usually are displaced to a marked degree.

"Complex," as defined by "Webster's New International Dictionary," unabridged, is as follows: (1) an assemblage of related things; (2) a whole made up of complicated or interrelated parts.

The complex simple fracture should be further described as to the type of bony injury, for example: complex simple fracture (transverse, comminuted, spiral or oblique, as the case may be).

Through personal contacts and correspondence with the personnel of the three National Fracture committees (American Medical Association, American College of Surgeons and American Academy of Orthopaedic Surgeons) with reference to their opinions and the necessity for such new fracture term or definition, there was unanimous agreement that such a definition of complex simple fracture was a necessary one and should be generally accepted and used in its broad meaning.

I make an appeal that this new fracture definition or its relative equivalent be used by the members of the medical profession. Besides expressing more adequately the pathologic process in such type fracture it will mean improved records for the hospitals and convey a better description of the fracture to the insurance companies, compen-

sation boards and other related agencies, thereby being of much help to the patient, the physician and every one concerned.

I will appreciate any opinion or suggestions relative to the foregoing.

H. Earle Conwell, M.D., Birmingham, Ala.

Reprinted from the Correspondence Department of The Journal of the American Medical Association, October 25, 1947, Vol. 135, p. 531.

Letter to the Editor

1 Eldon Lodge, Ascot, Berks.

Dear Dr. Hossack:

Just a note to tell you how very much I enjoy the Review. It is one of my remaining links with medicine and I find it an excellent means of keeping in touch.

I have showed some copies to a couple of doctors here, who have been full of admiration for both the set-up and material.

I am sending on my copies to Dr. E. B. Struthers, Cheloo University Medical College, Tsinan, Shantung, China. He is a Toronto graduate, so presumably gets the main Canadian and British journals but might be glad of some of the specialist journals, if any Manitoba doctors have some to spare. They are trying to build-up their library which was looted by the Japs.

With all best wishes for the continued success of the Review.

M. E. Patriarche, M.D.

Obituary

Dr. John Ralston Davidson

Dr. John Ralston Davidson died in St. Boniface Hospital on April 15 in his 78th year. Born in St. Philippe d'Argenteuil, Quebec, he came west with his parents at the age of seven to a farm in the Manitou district. He graduated in Arts from Manitoba College in 1893 and in Medicine from Manitoba Medical College in 1896. For three years he practised in Morden, then moved to Winnipeg where he practised for nearly 50 years, interrupted only by post-graduate study in New York and Baltimore.

In 1905 he was appointed to the honorary attending staff of the Winnipeg General Hospital and served until his resignation in 1930 at the age limit. In 1904 he became associated with the faculty of Manitoba Medical College and from 1913 to 1933 he was Associate Professor of Medicine. He became a Fellow of the Royal College of Physicians of Canada in 1931.

Towards the end of his hospital appointment he was especially interested in the problem of cancer. This led him to undertake experiments with white

American College of Surgeons Sectional Meetings

Dr. Arthur W. Allen, President of the American College of Surgeons, announces the last of six Sectional Meetings in 1948, for Fellows of the College, the medical profession at large, and hospital personnel, to be held at The Nova Scotian Hotel in Halifax, May 17 and 18. The meeting will be two days in length, and will include conferences for hospital personnel as well as sessions for the medical profession. The showing of medical motion pictures will begin each day's programme at 8.30 a.m. There will be luncheon meetings each day and a dinner meeting on the first evening. The latter will be followed by a symposium on cancer. Panel discussions on scientific subjects, led by internationally known authorities in each field of surgery, will be held each morning and afternoon. On the evening of the 18th, a meeting on health conservation which will be open to the public is planned.

The American College of Surgeons has a fellowship of 15,500 surgeons in the United States, Canada and other countries. Dr. Irvin Abell, of Louisville, is Chairman of the Board of Regents. Dr. Malcolm T. MacEachern and Dr. Bowman D. Crowell, of Chicago, are the associate directors.

The Honorable Frank R. Davis, M.D., Minister of Health, Province of Nova Scotia, is Chairman of the local Committee on Arrangements.

mice of his own breeding and he was able to produce a strain resistant to tar-carcinoma. He became convinced of the value of injections of embryonic tissue combined with a diet rich in vitamins. Results of these animal experiments and later of seven selected cases of human cancer treated by this method were published in the Canadian Medical Association Journal. In 1939 he attended the Third International Cancer Congress at Atlantic City, N.J., where the announcement of his theory that cancer is a deficiency disease aroused much comment.

He was President of the old Medico-Chirurgical Society of Winnipeg about 1909, and in 1941 he was made a Life member of the Winnipeg Medical Society, and two years later he was made a Senior member of the Canadian Medical Association.

In his younger days he was a fine athlete excelling as a jumper, and he played on champion lacrosse and football teams. As late as 1927 he played on a Medical soccer team on the sports programme marking the jubilee of Manitoba University.

He is survived by his widow, a son, three daughters and eight grandchildren.

ASSOCIATION PAGE

Reported by M. T. Macfarland, M.D.

Contract Practice

The Board of Trustees of the Manitoba Medical Service is expected to notify all medical members that from the date of the notice no member will be permitted to enter into a new contract with a group of patients to supply medical services which compete with the service supplied by the Manitoba Medical Service. Any infraction of this ruling will mean dismissal of the medical member from the Manitoba Medical Service. This means, in brief, that a medical member can not share as a partner in the Manitoba Medical Service and compete with it by a contract of his own.

It will be noted, that this does not apply to medical members who have had other contracts for some form of prepaid medical care previous to the date of the notice.

Contract practice has been in force in Manitoba in various forms for many years and in spite of any individual opinion for or against such practice, it has never been officially ruled on, one way or the other, by organized medicine. It must also be remembered, that with the formation of the Manitoba Medical Service as a sponsored scheme of the profession as a whole, no ruling was made regarding the contracts already held by some members, nor were new contracts prohibited. Since this was not done the Board of Trustees evidently feel that they are not justified in making their present ruling retroactive.

The Executive of the Manitoba Medical Association has considered this question with great care and the ruling of the Manitoba Medical Service Board was made only after having the opinion of your Executive. The Executive feel that any further consideration of contract practice in its relation to the Manitoba Medical Service should be dealt with at a general meeting of the Association.

Municipal Doctor Contract

Information received from the doctors who work on a municipal contract would indicate that many agreements are not in accordance with the standard contract. The fault may not be entirely unilateral. The doctor may feel that the existing contract suits his individual purpose better than the standard contract would do. The municipal council may be loathe to incur increased expenditure of funds for which the passage of a money by-law might be required. In addition, power to ratify a contract which does not conform to the standard rests with the Minister of Health. Drawing up of the contract by the Advisory Commission

under the Health Services Act after negotiation between the representatives of the medical profession and union of municipalities was a major task which called for a tremendous amount of work on the part of the negotiators. The medical members are naturally disturbed to learn that their efforts have been of little avail. If there are flaws in the contract, or reasons which make it unacceptable to the municipality, if there are personal reasons or ones which suggest that greater cooperation might be expected from the Minister of Health or his deputies, your comments will be appreciated. Perhaps we may all get together and share experiences.

General Practitioner Section

On March 20th, the General Practitioners requested affiliation with the Manitoba Medical Association. The list of elected officers also the aims and objects of the group were outlined, and the Executive Committee was unanimous that the new organization be welcomed as a section. Dr. W. J. Boyd drew the attention of the meeting to the survey which had been made by the Hospital Committee on March 3rd, indicating that six hundred patients were awaiting accommodation, nearly half of which were on the list of one city hospital. A sub-committee has been appointed to make inquiry concerning the availability of beds in Department of Veterans' Affairs Hospitals. The next meeting of the Executive Committee of the General Practitioners Association will be on April 22nd, in the Medical Arts Club Rooms.

Fee Schedule Revision

After four evening sessions a considerable degree of unanimity has been achieved by the M.M.A.-M.M.S. representatives towards adapting the present M.M.A. Schedule of Fees for use of Manitoba Medical Service. There has been clarification which will enable those whose duty it is to assess bills submitted to deal more fairly with each claim. One major problem of thorny nature is whether the present General Practitioner and Specialist Classification of fees should remain, or whether there should be one-fee-across-the-board. While that point is being discussed various other specialist groups are seeking revision of fees in their particular specialties.

Winnipeg Medical Society

The regular meeting of the Winnipeg Medical Society was held at the Medical College on Friday, April 16th, with the Vice-President, Dr. R. A. Macpherson, in the chair. Following the business ses-

sion Dr. Wallace Grant, Superintendent of the Children's Hospital, made an appeal on behalf of the building fund for the erection of a new Children's Hospital. Mr. C. G. Chapman, Acting Registrar of the Manitoba Pharmaceutical Association, was introduced to the meeting, and requested co-operation from the medical profession in the matter of narcotic prescriptions, the possibility of placing N.R. or stipulating the maximum number of refills on prescriptions for barbiturates and thyroid gland preparations.

The Scientific Programme consisted of three papers:

1. Surgery of Hypertension by Dr. A. C. Abbott.
2. "ETAMON" as a Diagnostic Agent in Peripheral Vascular Disease by Dr. J. Farr.
3. Recent Views on Thiamine Requirements by Dr. M. C. Blanchaer.

It is anticipated that a special meeting of the Society will be held on Wednesday, May 12th, when Dr. Maxwell Wintrobe, Professor of Medicine, University of Utah, Salt Lake City, will address the Society.

Nominating Committee

Report of the Nominating Committee of the Winnipeg Medical Society, for officers for 1948-49. The elections will be held at the final meeting of the Society, in May, when additional nominations may be made.

President:	Dr. R. A. Macpherson Dr. W. F. Abbott
Vice-President:	Dr. Ross H. Cooper Dr. T. E. Holland
Secretary:	Dr. K. R. Trueman Dr. V. F. Bachynski
Treasurer:	Dr. S. A. Boyd Dr. J. S. McKenty
Trustee:	Dr. G. M. Stephens Dr. K. Borthwick-Leslie

At our request Dr. Ross Mitchell consented to act on the Committee for the Benevolent Fund for another year, which obviates the necessity of an election. Owing to this being a new organization, we thought it would be of definite advantage to have a man like Dr. Mitchell stay on for a second year if possible.

Attention, Graduates

The Department of Veterans' Affairs now offers excellent opportunities to graduates in Medicine for postgraduate training and experience in its hospitals. Graduate interne training programmes have been organized in D.V.A. Hospitals with the co-operation and assistance of the Medical Schools of Canada, and adequate facilities exist for clinical, laboratory and radiological examinations. Although D.V.A. Hospitals do not maintain Services in Ob-

stetrics, Gynaecology and Paediatrics, a high standard of graduate interne training in Medicine and Surgery is available. In the larger hospitals training in special branches of Medicine or Surgery may be obtained.

Since the end of the war interne appointments in D.V.A. Hospitals have been reserved for veterans desiring further training before entering general practice or to qualify them for admission to the Examinations of the Royal College of Physicians and Surgeons of Canada. Interne appointments are now open to recent graduates in Medicine. Preference will be given to those who have served a rotating internship. At the present time D.V.A. Hospitals have an adequate number of patients and a sufficient variety of clinical material to provide a high standard of training in Medicine and Surgery and in certain Specialties for the greater part of the five-year course of training required for admission to the Examination of the Royal College of Physicians and Surgeons of Canada.

Interne appointments in D.V.A. Hospitals are available in various classifications and application may be made to Dr. J. L. Lamont, District Medical Officer, Commercial Building, Notre Dame Avenue East, and to Dr. W. R. Dunlop, Superintendent, Deer Lodge Hospital, Winnipeg.

Coroner's Report for Winnipeg, 1947

The report does not include St. Boniface and Fort Garry.

It seems strange that to date a yearly Coroner's report has not found an existence in print. I therefore make no apologies in bringing before the Manitoba Medical Association the facts as they are interpreted from the files of 1947. This year a 1947 report was made for the Department of the Attorney-General, and it appeared to me that the Medical Association, too, would be interested for three reasons:

It is definitely of interest to: (1) The ninety Coroners in the Province of Manitoba; (2) The profession generally; (3) The group of the Teaching Faculty.

There is a large number of investigated cases where the Pathological Work is very complete and examples too, of the practical application and investigation in relation to Forensic Medicine.

The Files for 1947 show the following:

Total Number of Cases Investigated	77
Total Number of Sudden Deaths (Investigations shown to be from Natural Causes)	54
Total Number of Accidental Deaths	7
Suicide Cases	4
Homicide Cases	1
Prematurity and Stillborn	1

Concealment of Birth	3
Abortions	4
Requests	51
Blood Alcohol Estimations	8
Toxicological Examinations	14
Autopsies requested by the Coroner	242
State Investigated (Under Coroner's Act)	115
Total Deaths (not greater) Winnipeg	2550
Total Deaths in Manitoba	6560

How the Various Groups Itemize

A. Sudden Death Natural Causes:

Heart	297
Cerebral Hemorrhage	67
Broncho Pneumonia	25
Lobar Pneumonia	13

*This group includes a large number of sudden infant deaths (found dead in bed).

Hemorrhage Pneumonia Virus	4
Broncho-Tracheitis	5
Acute Asthma	4
Diphtheria	1
Pulmonary Embolus	9
Susceptibility to Drugs	2
Acute Allergy (Dust, etc.)	2
Acute Epilepsy	3
T.B. Meningitis	4
T.B. MILIARY	4
T.B. Acute Hemorrhage	2
Acute Pancreatitis	1
Acute Enteritis (Virus)	4
Acute Leukemia	1
Anaemia	4
Brain Abscess	1
Acute Kidney Conditions	16
Acute Strangulated Hernia	5
Volvulus with Acute Intest Obst.	12
I.H. Erythro Blastosis	1
Cancer Cases	45
Peritonitis (Appendicitis)	4
Gastric Perforation	6
Fatty Degeneration of Liver	7
Eclampsia	1
Acute Addison's Disease	1
Obstetrical Shock	1
Atelectasis	1
Post Operative Kidney Hemorrhage	1
(Adhesions of Hydated Cyst)	
Congenital Malformation	4
Prematurity	10
Exposure and Concealment of Birth	3

B. Asphyxia Cases

Children:	
Babies Asphyxiated in Bed Clothes	10
Babies Asphyxiated from Regurgitated Food	6
Babies Asphyxiated Congenital Throat	1
Child Asphyxiated Post Operatively—Sponge	1

Child Asphyxiated During Anaesthesia	1
Babe Asphyxiated Due to Encephalitis	2
Asphyxia (Thymus)	2

Adults:

Asphyxiated Intoxicated—Regurgitated Food	2
Asphyxia During an Anaesthetic (Teeth Extraction)	1
Asphyxia from Cervical Dislocation	1
Asphyxia in Adult—Foreign Body (Piece of Meat)	1
Asphyxia due to Pneumococcal Meningitis	1

C. Violent Deaths

Accidental	77
Falls	19
Auto Accidents	25
Electric Bus	1
Electric Street Car	1
Thrown from a Motorcycle	1
Crushed in an Elevator (Daylite Block)	1
Crushed in Machinery	1
Starting Device in Polo Park	1
Fire Arms (Accidental)	3
Aeroplane Crash	3
Electrocution	3
Drowning (Accidental)	5
Accidental Poisoning (Bichloride)	1
Fracture of Spine (Accident, 1920)	1
Crushed by Falling Timber	1
Crushed by a Train	1
Crushed by Earth Cave-in	1
Death by Frost (Exposure)	2
Accidental Death (Run Away Horses)	2

D. Suicides

Suicides	40
Drowning	10
Hanging	8
Cutting Instruments	3
Fire Arms	5
Exposure to Gas (Domestic)	1
Jumping from High Building	1
Poisoning	11
Stepping in front of Train	1

E. Homicides

Homicides	2
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As you are aware, all deaths that take place in a Hospital within 24 hours of admittance require a Coroner's notification. There are 10 hospitals in this jurisdiction.

To the Coroners in the province, I might say I am hoping that in the near future at an Annual Medical Convention a meeting time might be arranged for the Coroners to get together and work out some of the problems that are common to all.

Respectfully submitted,

(Signed) I. O. Fryer, M.D.,

Coroner.

General Practitioners

Dr. Wallace Wilson

For the interest of all General Practitioners, herewith is a brief discussion of some of the problems which today confront the General Practitioner. The Canadian Medical Association has been concerned about these problems for some time and, as a result of many discussions, the Executive, at its last meeting, appointed a committee to be known as the General Practitioners' Committee and charged it with the responsibility of studying and reporting back on ways and means of helping the General Practitioner in his work, and of improving his status, both within and without the Association.

What does this committee propose to study, and what sort of a report does it intend to take back to the Executive? Let us make a short list.

The Establishment of a General Practitioners' Section Within the Canadian Medical Association.

As you all know very well, the Scientific Programme at the Annual Meetings of our Association is divided into sections—medicine, surgery, obstetrics, et cetera, and while it is true that the programme is designed primarily for General Practitioners, nevertheless, the papers are nearly all given by specialists. Should there be, specifically, a General Practitioners' Section? A section of which the Chairman and Secretary are General Practitioners? A section where the Scientific Programme is drawn up by General Practitioners and given largely by General Practitioners with specialists appearing on the programme only by invitation of that Section? Should the Section also hold a business session at the time of the Annual Meeting at which would be discussed problems peculiar to present day general practice and from which meeting might come resolutions to be sent forward for consideration to the Executive and Council of the Association?

The Committee asks all General Practitioners to think over this question of this Section because it proposes to call a meeting of General Practitioners on the Wednesday, June 23rd, at the 1948 Annual Meeting of the Association in Toronto, and there get your views.

The Committee, in its recommendations to the Executive, will be guided entirely by the wishes of the General Practitioner members of the Association, so, if you are planning to go to the Toronto Convention, be sure to be present at the meeting to be held at 5.00 p.m. on the Wednesday and there let us hear what you think. If you are not going to be there, please write to me here in Vancouver and let me have your views. The Committee is anxious to obtain a strong body of

opinion, either for or against the Section, from all parts of Canada, and to that end will send a notice of the meeting to the Journal and also invite correspondence.

Personally, I think General Practitioners would be well advised to have such a section. They should not only be taking a much larger part in the Scientific Programme, but they should also be more active in the administrative and business affairs of the Association. More of you should be on the Executive, in Council and have greater representation on the various committees. After all, General Practitioners constitute the majority of the Canadian Medical Association membership and the Canadian Medical Association is the only organized scientific body that really does represent you across Canada. In a special way, it is your own Association, and you should be taking a far larger part in all its affairs than you are.

2. The Certification of General Practitioners.

These days much is being done for the specialist. Most of our medical schools and teaching hospitals are carrying out very special programmes that make it possible and comparatively easy for picked students to engage in planned post-graduate training leading towards specialization. When this training is completed and these students have successfully passed certain examinations, the Royal College stands ready, either to admit to fellowship or certify and the specialist is launched.

Out in practice, the specialist may, in addition to membership in the Canadian Medical Association, join the national body representing his own specialty. And so, whether we like it or not, specialists are becoming more and more organized within their own groups and more and more their hall mark in Canada will be fellowship in or certification by our Royal College. Further, I look to the time in the not-too-distant future when certification qualifications and examinations will be done away with and then when a man successfully meets one standard of education and one set of examinations, he will be both admitted to fellowship and certified.

And that all brings us to another of the problems confronting the man in general practice today. Gone are the days when, after some years in practice, he can go away, concentrate his studies for a year or two on a particular branch of medicine and then return home or moving to a city, set up as a specialist. From now on, as a general rule, it will be, once a General Practitioner, always a General Practitioner; only rarely will it happen that after some years in practice a man will be able to take the time and money to qualify and prepare to sit for fellowship or certification examinations.

Now if General Practitioners are going to remain General Practitioners, is there any way of

recognizing the good ones—those who are doing first-rate work and keeping abreast of modern medicine? This question has been raised by some of you yourselves, and the answer would possibly appear to be also in certification. Certification of a first-class or Grade A General Practitioner would require the setting up of certain standards such as (a) five or ten years in practice; (b) during that time the publishing of the results of at least two or more pieces of clinical research work carried out while in practice; (c) the attendance at a certain number of refresher courses such as the one you are attending now, and finally (d) the passing of an examination which might be oral or both oral and written, and might or might not be conducted entirely by General Practitioners. Which would be the responsible body to undertake the setting up and the maintenance of the standards, the conduction of the examinations and the certification? It would appear on first consideration that the Canadian Medical Association would be the logical body. It does represent the General Practitioners, and there is somewhat of a precedent in that it already certifies hospitals for junior rotating internships.

This whole question of certification is again something in which no action will be taken except at your own express wish. So again, think it over; if you are going to Toronto, be prepared to speak to it and, if not, write me your views.

3. Clinical Research by General Practitioners.

In general practice, there are limitless opportunities for doing first-rate clinical research. Studies in environmental influences on disease, the earliest beginnings of many of the chronic diseases, the course and end results of others, nutrition, the results of preventive measures, et cetera—the list is endless. The undertaking of a bit of clinical research in your practice means carrying it on as a rule for a matter of years. The work is done and the records are kept as the cases come along, and with each case it means just a little more work and just a little more care.

Do General Practitioners want to engage in clinical research? Again, it is for you to tell us. We do not expect the older men to be interested; we do hope the younger men will be keen.

What the Committee hopes will develop is something along the following lines:

(a) That there will be made available for the committee sufficient annual sums of money from sources outside the Association.

(b) That with this money, they will be able to set up awards to be given annually for the best piece or pieces of clinical research carried out by general men in their practices.

(c) The Committee, with expert advice, to be prepared to advise on request as to:

(i) Suitable types of clinical research to be undertaken.

(ii) Methods of carrying on the work, e.g. records, questionnaires, et cetera.

(iii) Literature to be consulted and where it can be obtained on loan from libraries.

(iv) The Committee to make all arrangements for the annual judging of the papers sent in and to make all awards.

If you approve of a programme along such lines, and we obtain the funds, it is hoped that as part of the over-all programme, the medical school will co-operate and in the final year give to undergraduates some instruction in principles and methods of conducting clinical research in General Practice.

Once again, this is a proposal that I hope you would approve in principle. I am convinced that a man who starts practice imbued with the idea of carrying out clinical research and who sticks with that idea, will find his professional life much richer; he will practise better medicine and will make definite contributions to medical knowledge.



Large Showing Expected for 1948 Salon

The Canadian Physicians' Fine Art and Camera Salon which is to be held for the fourth successive year at the Royal York Hotel in Toronto, in June promises to be much larger in response than ever before. Plans have been completed for making the Salon an even greater success than it has been in previous years.

Many doctors have shown considerable interest in the Salon and a number of letters of enquiry have been received at the offices of the sponsors, Frank W. Horner Limited.

Entry forms have been sent out and some have already been completed and returned.

The jury of selection for this year's Salon include Professor K. B. Jackson, B.A., Sc., Director of Photographic Service at the University of Toronto; Mr. A. Y. Jackson, C.M.G., LL.D., one of the original members of the "Group of Seven" and Harvey Agnew, M.D., F.A.C.P., well-known Canadian physician and artist.

The Salon will be held in the Royal York Hotel in Toronto on June 23, 24 and 25, in conjunction with the annual convention of the Canadian Medical Association. All doctors are invited to visit the Salon whether exhibiting or not to see the work of their fellow physicians.

SOCIAL NEWS

Reported by K. Borthwick-Leslie, M.D.

Manitoba Medicine has lost and will miss very much Dr. Dan Revell, Anaesthetist deluxe. St. Joseph's Hospital, Victoria, B.C., is a fortunate recipient of his services. The Anaesthesiologists bade him "Godspeed" over a few cocktails at our last meeting.

felt sympathy to my co-sufferers whose gardens, sink, rumpus rooms, chickens, floors, etc., are in the lost but not found department of the flood. Swimming in sewage is not my idea of good, clean sport.

come to Dr. J. T. MacDougall, F.R.C.S. (Edin.), D.S.O., who has been appointed to the Surgical Staff at Deer Lodge Hospital.

the marriage of Elizabeth A. Henderson to Dr. David Halliwell was an event of April 23rd. Dr. H. King of Kenora was best man for Dr. Halliwell, and Dr. John Calvert usher. After a wedding trip in the U.S.A., the young couple will reside in Kenora.

and Mrs. S. O. Eggertson, whose wedding took place March 18th, have returned from their honeymoon in the Southern States and have taken up residence in the Fleetwood Apts.

Friday congratulations to Dr. E. H. Clark, Minnedosa, Manitoba. Born 1888.

Edith Peterkin, Belleville, Ontario, spent several weeks in Winnipeg with her mother, Harrow Street.

congratulations to Pat McNulty, new grandfather to a bouncing grandson. Competition is becoming keen among our Grampas!

and Mrs. M. R. MacCharles and Dr. and Mrs. C. W. Burns are enjoying a holiday at the west coast.

speaking of the Coast, we hear from Dr. Scarrow in Vernon, B.C., that the weather is beautiful, 75 degrees in the shade, the only difficulty is brushing away the apple blossoms to see the thermometer.

Dr. and Mrs. Roy Fell, Norwood, announce the engagement of their daughter, Mary, to Lloyd Higgins, the wedding to take place May 11th, in Norwood United Church.

There have been numerous social functions in honor of Frances MacCharles, daughter of Dr. and Mrs. F. D. MacCharles. Frances will marry Andrew Hamilton Jukes on May 5th.

Dr. and Mrs. S. S. Peikoff, motored to Fargo, N.D., where Sammy addressed the Medical Association.

Dr. and Mrs. Sibley announce the birth of Robert William, April 19th.

Dr. and Mrs. A. Portigal, Los Angeles, California, formerly of Winnipeg, announce the birth of their daughter.

Dr. and Mrs. G. D. Thomson, St. Mary's Road, announce the arrival of Dale Jancen, April 3rd.

Dr. and Mrs. Wallace Grant, are receiving congratulations on the birth of their daughter, April 10th.

Dr. and Mrs. John A. Swan, Campbell Street, are happy to announce the birth of John David, March 27th.

Dr. and Mrs. Allan McCulloch, Lawndale Avenue, also announce the arrival of Cameron Hugh.

Dr. and Mrs. W. E. Munro and Miss Mary Duncan, report a most enjoyable motor trip to Mexico City.

Dr. K. Borthwick-Leslie and Mrs. Harold Blondal, entertained Sunday, April 18th, in honor of Mr. and Mrs. Alvin Blondal. Quite a successful "do," about one hundred guests, in my bungalow, but the loot for the kids made up for the crowded quarters.

Our sincere sympathy to the family and numerous friends, in the loss of that grand old timer, Dr. J. R. Davidson, Ruskin Row.



**In the treatment of
inflamed or ulcerated
conditions of the
Gastro-Intestinal
Mucosa**

MICROPHOTOGRAPH OF COMMERCIALY
AVAILABLE ALUMINUM HYDRATE POWDERS
SHOWING PARTICLES TO BE WELL ABOVE
THE 25 MICRON SIZE

STOMALUMINE

A TRULY COLLOIDAL ALUMINUM HYDRATE

MICROPHOTOGRAPH (PARTICLES UNDER 10
MICRONS) SHOWING STOMALUMINE POWDER
A TRULY COLLOIDAL ALUMINUM HYDRATE
PERMITTING THE FORMATION OF A TRUE
ADSORBENT GEL WITH HCL WHICH MAY
FORM A SOOTHING PROTECTIVE COATING
OF THE ULCERATED OR IRRITATED MUCOSA.

**FLATULENCE
DYSPEPSIAS
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GASTRIC AND DUODENAL ULCERS
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ROUGIER FRERES - 350 LE MOYNE STREET - MONTREAL (1)

Strictly Ethical Specialties

College of Physicians and Surgeons of Manitoba

October 15, 1947 — Registration Committee

Enabling Certificates granted: Dr. Lester Harold Morgan, M.D., College of Medical Evangelists, 1947. Dr. John Gideon Foster, M.D., College of Medical Evangelists, 1927.

Enabling Certificates refused: Dr. Edward Essner, M.D., University of Vienna, 1937. Dr. Crkvenac, M.D., Medical School of Zagreb, Croatia, 1933.

Ineligible for registration: Dr. Vladimir Shevtchuk, M.D., Rostov-on-Don State Medical Educational Institute, Russia, 1933.

November 17, 1947 — Registration Committee

Temporary Licence granted: Dr. Joseph Cornell Warth, M.B., Ch.B., Victoria U. of Manchester, 1947.

Registration granted: Dr. Frederick Bernard Aratan, M.B., B.S., University of London, 1943. Arthur Hugh MacKinnon, M.B., Ch.B., University of Edinburgh, 1943.

Registration Approved: Dr. James Graham Gilchrist, M.B., Ch.B., University of Glasgow, 1939.

December 3, 1947 — Registration Committee

Cancellation of Certificate: (Registration not completed), Dr. Walter Campbell MacKenzie.

Cancellation of Temporary Licence: (Issued under wartime amendment to Medical Act, now repealed), Capt. A. S. Tauber.

Temporary Licence granted: Major David Harold Merritt Hall, M.D., C.M., Queen's University, 1943.

Registration Granted: Dr. Melville Joseph Wartz, M.D., C.M., Queen's University, 1937.

January 9, 1948 — Registration Committee

Registration granted: Dr. William McCulloch Crawford, M.B., Ch.B., University of Glasgow, 1941.

George Peter Cheng, M.D., College of Medical Evangelists, 1945. Dr. Bernhard Sigal, M.D., Queen's University, 1945. Dr. Bruce Flood Paige, M.B., B.S., University of Sydney, 1945. Dr. David Christopher Boyd, M.B., Ch.B., University of Edinburgh, 1943.

Registration deferred: Dr. A. L. Rice, M.D., University of Toronto, 1932.

Enabling Certificate granted: Dr. Phoebe Hewitt Cox, M.D., McGill University, 1947.

Application for an Enabling Certificate deferred: Dr. Francis S. N. Kwok.

Temporary licence insufficient for reciprocal registration with General Medical Council of Great Britain.

Referred to May meeting of Council:

1. Reciprocity with other Australian Medical Boards.

2. Registration of foreign graduates.

Certificate of Credit under the Basic Sciences Act:

1. Registrar reported several applicants awaiting Certificate of Credit.

2. Interest of applicant for Enabling Certificate should be protected by production of a Certificate of Credit under the Basic Sciences Act.

Student registration regulations to be reviewed.

February 6, 1948 — Registration Committee

Temporary Licences confirmed: Dr. Maurice Hubar, M.D., C.M., Dalhousie University, 1945. Dr. David McMaster Kennedy, M.B., Ch.B., Queens University of Belfast, 1942. Dr. Joseph Silver Collings, M.B., B.S., University of Sydney, 1946.

Registration confirmed: Dr. Henry Andrew Kachuk, M.D., University of Laval, 1945.

Registration approved: Dr. Harben Jay Bourtouline-Young, M.B., B.S., University of London, 1943.

Enabling Certificate granted: Dr. Harold Milard Smith, M.D., College of Medical Evangelists, 1947.

Enabling Certificate deferred: Dr. Andrew Paul Haynal, M.D., College of Medical Evangelists, 1948.

February 17, 1948 — Discipline Committee

1. Decided that there is no legal impediment to use of the _____ (deceased) name by Dr. _____.

2. Referred to next Council meeting, two complaints by patients against the attending physicians.

3. Refusal of doctors to attend emergency calls. Communication from Department of Health and Public Welfare and Advisory Committee under the Health Services Act, enclosing copy of letter from _____ Municipality, inquiring whether doctors are entitled to refuse calls, or the municipality entitled to know why. Details of cases cited were requested from the municipality, but were not forthcoming. The Committee felt that when doctors were unable to accept calls, they might assist patients in securing help for emergency cases by recommending another doctor or advising the caller to contact the Directory or Registry.

4. Professional cards to the public. The circulation by Dr. _____ of professional cards to the public, was considered a form of solicitation and unethical.

5. The mechanism by which minor offenses, or those not considered sufficiently serious to warrant erasure from the Register, as dealt with in Great Britain and some Canadian provinces, was brought to the attention of the Committee.

February 17, 1948 — Education Committee

The business of the meeting was consideration of a questionnaire received from Dr. T. C. Routley, Chairman of the Council, World Medical Association, relating to standards of medical education in this Province. A similar questionnaire had been addressed to the Dean of the Faculty of Medicine, and Executive Secretary of the Manitoba Medical Association, and the main content of the replies from the Faculty and Association were available to the Committee. The Registrar was instructed to reply to the questionnaire and to send a copy of the reply to each member of the Council.

February 17, 1948 — Executive Committee

A supper meeting of the Executive Committee of the Council of the College of Physicians and Surgeons of Manitoba, was held in the Medical Arts Club Rooms, at 6 p.m., on Tuesday, February 17th, 1948.

Present—Dr. B. D. Best, Chairman; Dr. W. F. Stevenson, President; Dr. C. B. Stewart, Vice-President; Dr. M. T. Macfarland, Registrar; Dr. T. H. Williams, Treasurer; Dr. J. S. Poole, Dr. I. Pearlman and Dr. J. M. Lederman. Dr. W. S. Peters was absent through illness.

1. Winnipeg Medical Society Trust Fund.

It was agreed that Dr. Ross Mitchell be invited to present the case for the Winnipeg Medical Society Benevolent Fund at the May meeting of Council.

2. Reinstatement Fee of Dr. _____

Payment of the reinstatement fee by Dr. _____ was confirmed. The action of the Medical Council of Canada in reinstating Dr. _____ was brought to the attention of the meeting.

3. Obligatory Forms for Medical Students.

The report of conclusions reached by negotiation of the "Committee of Six" (representing the Government of Manitoba, the Board of Governors of the University of Manitoba, and the Manitoba Medical Association) was presented for information. (Ref. Manitoba Medical Review, December, 1947, Vol. 27, No. 12, p. 698).

4. By-election in South Winnipeg, and Scrutineers.

Nominations were considered and the Registrar was instructed to distribute voting papers by March 1st. Dr. D. Swartz and Dr. W. T. Dingle were appointed scrutineers in the event that Dr. E. F. E. Black and Dr. A. R. Birt were unable to act.

5. Liaison Committee of the College of Physicians and Surgeons and the Manitoba Medical Association.

The Committee is composed as follows: C.P. and S.: Dr. B. D. Best, Dr. A. A. Alford and Dr. W. S. Peters. M.M.A.: Dr. R. W. Richardson, Dr. J. R. Martin and Dr. R. E. Dicks.

The report outlined measures agreed upon the combining of the business offices of the College and the Association, with each body retaining autonomy. The present Executive Secretary of the Manitoba Medical Association, become Registrar of the College of Physicians and Surgeons, and directs the duties of the combined staff. A stated amount is paid monthly by the College to the Association to cover rent, telephone and share of secretarial staff, while monthly salary is paid by the College to the Registrar. Each body maintains its office equipment on inventory. Adjustments in the arrangement will be required from time to time. Relinquishings of the suite formerly occupied by the College will be disposed of to the new tenants. Some additional office furniture will be required and the Executive authorized the Treasurer and Registrar to arrange same.

6. Printing of Minutes in Manitoba Medical Review and Annual Report.

It was agreed that the minutes for 1947, including those of the October Annual Meeting, be printed and that the minutes of subsequent meetings appear monthly in the Manitoba Medical Review, on the basis of cost outlined.

7. Proposed Legislation.

Copy of proposed legislation was received from Hon. Ivan Schultz, Minister of Health and Public Welfare. The College is interested in contemplated changes in the Basic Sciences Act, whereby holders of L.M.C.C. and G.M.C. registration may be granted Certificates of Credit. There was discussion whether the Act would be changed for the same purpose might be served by Order in Council.

All legislation was referred to the Committee of Fifteen.

8. Fees.

The Registrar stated that Dr. _____ has been practising in _____, Saskatchewan, and has come to the office to inquire re his standing. He should return to Manitoba. Dr. _____ graduated from the University of Manitoba in 1913, did not obtain his L.M.C.C. He practised in Manitoba until 1916 when he joined the C.A.M.C. When he returned from overseas he began practising in Saskatchewan. The Registrar explained to him that he would probably be charged the annual fees for the years 1913-16, and that the question of his life membership would be referred to the Executive Committee.

The Registrar also stated that in connection with life membership, the question had come directly to him concerning life membership of veterans of the recent war.

(To be continued in the June issue)

Department of Health and Public Welfare

Comparisons Communicable Diseases — Manitoba (Whites and Indians)

DISEASES	1947		1946		TOTALS	
	Feb. 22 to Mar. 20, '48	Jan. 25 to Feb. 21, '48	Feb. 23 to Mar. 22, '47	Jan. 26 to Feb. 22, '47	Dec. 28, '47 to Mar. 20, '48	Dec. 29, '46 to Mar. 22, '47
for Poliomyelitis	2	0	0	0	2	0
ly by enpox	227	274	82	77	685	289
ent, heria	2	1	7	10	5	29
heria Carriers	0	0	1	2	0	6
ter y—Amoebic	0	0	0	0	0	0
ter y—Bacillary	0	0	0	1	0	1
ce e- gelas	1	1	3	6	5	14
e arr- thalitis	0	0	1	0	0	1
ne, enza	14	3	3	12	18	19
d by es—German	21	43	1628	1030	79	3279
w to ngococcal Meningitis	2	1	1	3	3	5
req- ures	183	195	310	199	488	661
chalmia Neonatorum	0	0	0	0	0	0
monia—Lobar	17	12	8	28	36	49
geral Fever	0	0	1	0	0	1
cal et Fever	11	8	12	25	30	62
e Sore Throat	5	1	3	2	6	6
ipox	0	0	0	0	0	0
7, in- us	0	0	0	0	0	0
ting oma	0	0	0	0	0	0
nt erculosis	111	118	79	36	246	131
oid Fever	0	1	0	0	1	0
oid Paratyphoid	0	0	0	0	0	0
oid Carriers	0	0	0	1	0	1
lant Fever	0	0	0	1	0	0
oping Cough	28	39	89	81	123	222
erhoea	111	115	163	151	346	495
illis	40	47	35	64	125	130
mph- hoea and Enteritis, under 1 yr.	12	4	6	12	22	23

WEEK PERIOD, FEBRUARY 22 TO MARCH 20, 1948

DISEASES	*743,000 Manitoba	*906,000 Saskatchewan	*3,825,000 Ontario	*2,962,000 Minnesota
White Cases Only)				
roximate population.				
for Poliomyelitis	2	—	2	5
enpox	227	77	1414	—
hoea and Enteritis	12	1	—	—
heria	2	6	3	20
ter y—Amoebic	—	—	—	3
gelas	1	1	5	—
enza	14	—	53	5
ia	—	—	—	7
es	21	23	5417	836
es, German	2	6	123	—
ngococcal Meningitis	2	—	6	4
monia Lobar	17	—	—	—
ps	183	268	1319	—
et Fever	11	7	253	167
e Sore Throat	5	—	74	—
erculosis	111	29	149	367
oid Fever	—	1	3	1
lant Fever	—	1	10	9
oping Cough	—	11	108	80
erhoea	111	—	83	—
illis	40	—	57	—
ipox	—	—	—	1

DEATHS FROM REPORTABLE DISEASES

For Four-Week Period, February 25 to March 23, 1948

Urban—Cancer, 41; Influenza, 1; Pneumonia Lobar (108, 107, 109), 4; Pneumonia (other forms), 10; Poliomyelitis, 1; Syphilis, 3; Tuberculosis, 11; Diarrhoea and Enteritis (under 2 years), 1; Septic Sore Throat, 1; Cerebrospinal Meningitis, 1; Septicaemia, 2; Other diseases of the skin, etc., 1. Other deaths under 1 year, 22. Other deaths over 1 year, 188. Stillbirths, 8. Total, 218.

Rural—Cancer, 28; Influenza, 3; Pneumonia Lobar (108, 107, 109), 3; Pneumonia (other forms), 11; Tuberculosis, 3; Whooping Cough, 1; Diarrhoea and Enteritis (under two years), 6; Hodgkin's Disease, 1. Other deaths under 1 year, 16. Other deaths over 1 year, 155. Stillbirths, 16. Total, 187.

Indians—Cancer, 1; Pneumonia (other forms), 2; Tuberculosis, 5. Other deaths under 1 year, 6. Other deaths over 1 year, 6. Stillbirths, 0. Total, 12.

Communicable diseases in Manitoba continue to show quite a low incidence. Excepting for chickenpox, mumps, tuberculosis, gonorrhoea and syphilis, the numbers are negligible and even in these five they show a slight decrease.

By the time this copy of the Review arrives it should really be spring and the roads quite passable again. What about immunization? Are all the infants and children in your district protected against diphtheria, whooping cough and smallpox? How about starting clinics now and getting this worthwhile work done before the summer vacation period?

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Manitoba Medical Service

Balance Sheet at 31st December, 1947

STATEMENT I

Assets

CASH AT BANK	
Current Accounts	\$101,867.24
(Available to meet operating expenses)	
CASH ON HAND	100.00
ACCOUNTS RECEIVABLE	
Subscriptions in process of collection	14,061.37
FURNITURE, FIXTURES AND	
OFFICE EQUIPMENT	1.00
	<u>\$116,029.61</u>

Liabilities and Reserve

ACCOUNTS PAYABLE	
Accounts of Medical Members	\$ 63,515.14
(Accounts for services given in December)	
SUNDRY ACCOUNTS PAYABLE	3,708.04
(Payable in January)	
Appropriation for Office Equipment, ordered but not delivered (Re-establishment expense)	3,299.11
	<u>\$ 70,522.29</u>
DEFERRED INCOME	
Unearned Subscriber payments	3,779.44
DEFERRED LIABILITIES	
Manitoba College of Physicians and Surgeons	\$ 3,000.00
Manitoba Medical Association	600.00
Winnipeg Medical Society	300.00
	<u>3,900.00</u>
RESERVE	
Balance at 31st December, 1946	\$ 4,302.61
Excess of Income over Expenses for year—Statement II	33,525.27
	<u>37,827.88</u>
	<u>\$116,029.61</u>

Auditor's Report

To the Board of Trustees,
Manitoba Medical Service,
Winnipeg.

We have audited the books of the Manitoba Medical Service for the year ended 31st December, 1947, and report that we have obtained all the information and explanations we have required and that, in our opinion, the above Balance Sheet and accompanying Statement of Income and Expenses are properly drawn up so as to exhibit a true and correct view of the Service's affairs at 31st December, 1947, and the results of its operations for the year then ended, according to the best of our information and the explanations given, and as shown by the books of the Service. All the transactions of the Service that have come within our notice have been within the objects and powers of the Service, to the best of our information and belief.

GEORGE A. TOUCHE & CO.,

Chartered Accountants, Auditors.

Winnipeg, 5th March, 1948.

STATEMENT II

Statement of Income and Expenses for the Year Ended 31st December, 1947

INCOME	
Earned Subscriptions	\$504,361.27
Sundry	2,830.51
	<u>\$507,191.78</u>
EXPENSES	
Accounts of subscribers and Dependents	\$607,626.76
Less Amounts absorbed by Medical Members of the Service	228,376.91
	<u>\$379,249.85</u>
Administration fee paid to Manitoba Hospital Service Association	30,990.30
Operating Expenses	34,122.14
Furniture, Fixtures and Office Equipment	1,007.30
Re-establishment expenses (including appropriation of \$3,299.11 for office equipment ordered, but not delivered)	28,296.92
	<u>473,666.51</u>
EXCESS OF INCOME OVER EXPENSES, carried to Statement I	<u>\$ 33,525.27</u>

Approved on behalf of the Board of Trustees
W. G. BEATON, M.D.

Membership as at 31st December, 1947

Subscribers, 17,241	Dependents, 22,051
Total Participants, 39,292	

Officers of the Board

W. G. Beaton, M.D., Chairman
Mr. G. Lawson, Vice-Chairman
C. W. Clark, M.D., Secretary
D. Wheeler, M.D., Treasurer

E. S. Moorhead, M.B., Medical Director
Mr. A. G. Richardson, Manager

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